

SEQUENCE LISTING

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 The United States of America as Represented by the
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<120> PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE

<130> EPI-103X

<150> US 60/431,494
 <151> 2002-12-06

<160> 27

<170> PatentIn version 3.2

<210> 1
 <211> 1904
 <212> PRT
 <213> Plasmodium falciparum

<400> 1

Met Ser Pro Ser Lys Thr Met Asp Thr Phe Tyr Lys Lys Lys Arg Asn
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Val Leu Thr Leu Ile Asn Asp Glu Gln Asp Leu Tyr Ile Tyr Lys Asp
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Ile Tyr Asn Asn Cys Glu Asn Asp Ile Tyr Ser Leu Tyr Leu Asn Ile
 35 40 45

Ile Asn Gln Tyr Lys Asn Cys Leu Asp Gly Glu Lys Lys Leu Phe Leu
 50 55 60

Asn Lys Cys Ile Lys Asn Gly Asn Val Lys Tyr Ile Glu Lys Val Val
 65 70 75 80

Lys Gln Ile Ile Glu Lys Lys Asn Val Tyr Asn Asp Ile Asp Asp Lys
 85 90 95

Ser Ile Lys Lys Ser Ile Asp Leu Leu Ile Tyr Pro Cys Val Tyr Glu
 100 105 110

Ile Asn Lys Asn Glu Phe Tyr Tyr Thr Thr Ser Cys Cys Ser Gly Arg
 115 120 125

Ile Val Ile Phe Lys Glu Val His Ile Asn Asn Lys Asn Asp Asn Gln
 130 135 140

Lys Lys Ile Phe Lys Asn Ser Thr Thr Ser Gln Glu Lys Lys Glu Glu
 145 150 155 160

Asn Ile Ser His His Leu Ser Asn Ile Asn Leu Leu Asn Val His Glu
 165 170 175

Lys Asp Glu Leu Phe Leu Ser His Phe Lys Lys Asn Phe Ile Leu Gln
 180 185 190

Asn Asn Glu Glu Lys Tyr Thr Tyr Cys Ser Asp His Asp Ile Ser Ser
 195 200 205

Phe Phe Asp Val Ser Lys Lys Lys Thr Asn Lys Trp Glu Asp Ile Tyr
 210 215 220

Glu Glu Lys Asn Leu Lys Glu Asn Ile Leu Tyr Ile Asn Lys Glu His
 225 230 235 240

Lys Lys Lys Lys Val Arg Lys Lys Lys Lys Ile His Lys Lys Asn Val
 245 250 255

His Ile Leu Tyr Ser Ser His Ser His Gln His Leu Lys Tyr Asp Ile
 260 265 270

Lys Val Ile Lys Asp Ile Leu Lys Lys Glu Leu Phe Gln Asn Tyr Phe
 275 280 285

Asp Val Asn Gln Arg Asn Asp Tyr Lys Asn Ile Ser Phe Asp Phe Met
 290 295 300

Gly Thr Lys Lys Tyr Ser Leu Gln Asn Glu Val Asn Leu Asn Ser Ser
 305 310 315 320

Ile Ile Thr Met Ser Asp Lys Glu Gly Met Lys Lys Lys Glu Lys Asn
 325 330 335

Asn Lys Val Ile Asn Ile Leu Asn Asn Gln Asn Lys Arg Asn Ile Phe
 340 345 350

Ile Lys Phe Glu Pro Phe Ile Ile His Val Lys Cys Thr Thr Phe Leu
 355 360 365

Ser Ala Leu Lys Leu Leu Lys Ile Ala Gln Tyr Ala Gly Leu Lys Gln
 370 375 380

Ser Gly Ile Leu Asn Phe Asn Lys His Val Thr Val Ala Ile Arg Gly
 385 390 395 400

Ser Met Arg Leu Glu His Leu Leu Gly Asp Ile His Pro Thr Leu Gln
 405 410 415

Gln Thr Asn Leu Met Glu Ile Ile His Ile Cys Asn Asn Lys Leu Ser
 420 425 430

Lys Asn Leu Ser Gln Leu Val His Phe Tyr Lys Cys Phe Lys Gln Phe
 435 440 445

Lys Glu His Glu His Thr Tyr Gln Phe Val Ser Ile Asn Arg Glu Met
 450 455 460

Leu Ser Ser Leu Glu Asn Asn Leu Ser Ser Asn Thr Lys Gln Lys Lys
 465 470 475 480

Lys Ser Asn Lys Lys Asn Thr Leu His Val Lys Asp Asn Leu Gln Asp
 485 490 495

Asn Lys Lys Ile Ala His His Met Lys Lys Lys Lys Lys Glu Ile Asn
 500 505 510

His Leu Tyr Leu Thr Cys Ser Gly Lys Lys Asn Ile Pro Asn Gly Asn
 515 520 525

Arg Ser Ile Ala Glu Gln Asp Lys Thr Glu Cys Lys Leu Lys Asp Glu
 530 535 540

Ile Ile Tyr Glu Asn Thr Glu Asn His Ile Asn Ile Ile Lys Lys Glu
 545 550 555 560

Lys Asn Ile Ile Asp Leu Asn Lys Tyr Asn Ile Gln Leu Asn Glu Glu
 565 570 575

Gly Tyr Ile Ile Asn Glu Asn Lys Asn Asp Lys Phe Ile Gly Trp Lys
 580 585 590

Ile Leu Gly Asn Asn Asn Met Asn Val Gln Asn Phe Phe Val Trp Gly
 595 600 605

His Asp Met Phe Met Gln Glu Asn Lys Ile Tyr Met Phe Gly Gly Phe
 610 615 620

Ser Lys Gly Val Arg Asn Asn Lys Leu Lys Ile Tyr Asp Ile Ile Asn
 625 630 635 640

Lys Lys His Phe Ile Tyr Asp Thr Glu Leu Pro Ser Leu Val Phe His
 645 650 655

Asn Phe Val Gln Leu Asp Asp Lys Phe Ala Phe Ile Phe Gly Gly Arg
 660 665 670

Gln Asn Pro Lys Asn Cys Thr Asn Met Val Trp Val Tyr Asn Ile Lys
 675 680 685

Glu Asn Phe Trp Ile Lys Ala Arg Arg Thr Ser Thr Leu Val Arg Lys
 690 695 700

Asn Lys Asn Val Leu Phe Leu Glu Lys Met Glu Lys Asn Met Glu Val
 705 710 715 720

Lys Met Asp Arg Met Lys Tyr His Met Gly Lys Lys Tyr Asn Asn Asp
 725 730 735

Asp Asn Asn Ser Asp Asn Asn Asn Asp Asn Asn Asn Asp Asn Asn Asn
 740 745 750

Asn Asn Phe Leu Cys Asn Asp Glu Asn Ile Phe Tyr Phe Asn Asn Glu
 755 760 765

Glu Glu Pro Cys Pro Arg Tyr Arg His Ala Ser Val Phe Val Arg Arg
 770 775 780

Tyr Ile Lys Lys Ser Lys Ser Ile Tyr Ile Phe Tyr Thr Tyr Gly Gly
 785 790 795 800

Val Asn Glu Lys Asn Glu Ile Leu Asn Asp Ile Trp Glu Gly Lys Ile
 805 810 815

Ile Leu Asn Leu Glu Asp Lys Gly Ile Ala His Ile Glu Trp Asn Lys
 820 825 830

Lys Asn Cys Ser Gln Lys Thr Glu Ala Cys Arg Ile Asn Asn His Ser
 835 840 845

Met Ile Tyr Asn Lys Lys Lys Asn Phe Ile Tyr Ile Val Gly Gly Tyr

850		855		860	
Gln Asp Asn Asp Lys Asp Asn Tyr Thr Gln Tyr Asn Glu Tyr Asn Asn					
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Asn Asn Asn Asn Asn Asn Lys Asp Asn Ser Val Asn Ser Asp Asp Met					
	885		890		895
Ile Gly Met Pro Asn Leu Ser Ser Thr Val Val Cys Lys Lys Met Glu					
	900		905		910
Tyr Leu Tyr Thr Tyr Asp Ile Lys Lys Asp Asn Phe Phe Tyr Thr Lys					
	915		920		925
Cys Leu Gly Asp Asp Asn Met Glu Leu Lys Ala Tyr Pro Ser Asp Arg					
	930		935		940
Phe Ser His Ser Thr Cys Leu Ile Asn His Asn Phe Phe Met Leu Val					
	945		950		955
Gly Gly Ile Asn Ile His Arg Thr Leu Asn Asp Val Trp Leu Phe His					
	965		970		975
Ile Lys Thr Asn Lys Trp Asn Tyr Leu Gly Thr Phe Thr Phe Gln Asn					
	980		985		990
Met Tyr Val Arg Ser Lys Val Val Ser Glu Asn Asn Cys Val Tyr Ile					
	995		1000		1005
Ile Gly Gly Gly Cys Thr Val Phe Thr Phe Gly Ser Phe Phe Asp					
	1010		1015		1020
Val Pro Ile Trp Ser Asn Phe Ser Gly Ile Met Lys Ser Ile Gln					
	1025		1030		1035
His Lys Glu Leu Lys Asn Val Leu Ile Phe Ser Glu Asp Arg Glu					
	1040		1045		1050
Val Lys Glu Gly Gln Ala Thr Tyr Asn Asn Glu Ile Lys Lys Asn . .					
	1055		1060		1065
Cys Gly Asn Asn Asn Asp Asn Asn Asn Asn Asn Asn Asn Asn Asn					
	1070		1075		1080
Asn Asn Asn Asn Lys Cys Ser Asn Asn Tyr Asn Ile Leu Val Asp					
	1085		1090		1095

Lys Val	Ala Arg	Asn Glu	His	Leu Glu	Lys Tyr	Asn	Leu Cys	His
1100			1105			1110		
Asn Met	Leu Ile	Glu His	Lys	Asp Val	Ile Lys	Lys	Glu Ile	Leu
1115			1120			1125		
Val Phe	Glu Lys	Lys Lys	Lys	Lys	Lys Lys	Lys	Asp Glu	Lys
1130			1135			1140		
Gly Asp	Asp Ile	Met Asp	Val	Glu Lys	Lys Asn	Glu	Leu Pro	His
1145			1150			1155		
Ile Ile	Asp Glu	Glu Lys	Lys	Gly Thr	Asp Arg	Asp	Val Glu	Lys
1160			1165			1170		
Ser Ser	Phe Cys	Leu Asp	Glu	Lys Ser	Ile Lys	Ile	Gly Leu	Tyr
1175			1180			1185		
Ile Ile	Ile Lys	Asn Lys	His	Phe Val	Lys Gln	Ile	Lys Val	Tyr
1190			1195			1200		
Leu Glu	Asn Lys	Lys Met	Phe	Asp Asn	Ser Leu	Lys	Ile Tyr	Asn
1205			1210			1215		
Pro Lys	Gly Asn	Gln Lys	Asn	Glu Glu	Asn Glu	Lys	Asn Glu	Glu
1220			1225			1230		
Asn Glu	Lys Asn	Glu Glu	Asn	Glu Lys	Asn Glu	Glu	Asn Glu	Lys
1235			1240			1245		
Asn Glu	Glu Asn	Glu Lys	Asn	Glu Asp	Tyr Asn	Lys	Ile Met	Gly
1250			1255			1260		
Glu Glu	Lys Lys	Phe Tyr	Val	Pro Ile	Lys Lys	Lys	Leu Asp	Asp
1265			1270			1275		
Asp Ile	Leu Lys	Asn Asp	Glu	Tyr Phe	Lys Thr	Val	Leu Leu	Asp
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Lys Ile	Glu Arg	Cys Asn	Asp	Gly Asn	Ile Leu	Tyr	Tyr Glu	Lys
1295			1300			1305		
Val Ile	Cys Glu	Ile Tyr	Asn	Gly Lys	Tyr Gln	Asp	Asn Ile	Lys
1310			1315			1320		

Ser Gln Asn Ser Asn Thr Phe Leu Lys Lys Lys Leu Arg Ile Leu
 1325 1330 1335

 Phe His Lys Phe Leu Asn Lys Lys Val Lys Asn Tyr Leu Asn Ser
 1340 1345 1350

 Ser Glu Lys Lys Met Val Leu Gln Gly Tyr Arg Lys Tyr Glu Ile
 1355 1360 1365

 Ile Gly Asn Ile Leu Ile Phe His Tyr Lys Tyr Phe Glu Cys Ile
 1370 1375 1380

 Met Lys Leu Tyr Lys Val Tyr Glu Gly Lys Leu Lys Lys Tyr Lys
 1385 1390 1395

 Lys Glu Ile Asn Glu Met Ile Glu Arg Arg Arg Leu Tyr Arg Asp
 1400 1405 1410

 Tyr Ser Tyr Ile Ile Lys Asn Lys Lys Lys His Asn Lys Leu Val
 1415 1420 1425

 Ser Cys Phe Leu Met Asn Asp Ile Tyr Glu Tyr Lys Tyr Tyr Val
 1430 1435 1440

 Lys Glu Val Lys Lys Phe Trp Leu Ala Ile Lys Asp Ile Phe Asn
 1445 1450 1455

 Asn Lys Asp Ile Phe Asn Asn Lys Glu Ile Ile Leu Asn Thr Asn
 1460 1465 1470

 Ile Leu Ser Leu Lys Lys Lys Lys Lys Glu Lys Lys Lys Lys Lys
 1475 1480 1485

 Lys Asn Asn Asn Asn Asn Lys Phe Tyr Val Lys Val Lys Phe Asn
 1490 1495 1500

 Lys Lys Gly Ile Thr Asn Lys Ile Asn Ile Leu Leu Tyr Arg Arg
 1505 1510 1515

 Arg Lys Asn Leu Phe Asp Glu Asn Phe Cys Arg Asn Ile Met Lys
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 Arg Asn Lys Asn Cys Glu Ile Ile Lys Lys Lys Arg Lys Ile Lys
 1535 1540 1545

Cys Val	Ala Leu Tyr Glu	Lys	Val His Gly Lys Leu	Arg Gln Asn
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Lys Ile	His Ile Val Cys Gly	Lys Asn Leu Lys Thr	Val His Ile	
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Glu Asn	Lys Ile Lys Tyr Lys	Leu Asp Leu Thr Lys	Cys Met Phe	
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Ser Ser	Gly Asn Gly Thr Glu	Lys Glu Arg Met Lys	Asn Met Tyr	
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Ile Val	Ser Asn Asn Asp Asp	Asn Ile Asn Asn Lys	Asp Lys Asn	
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Lys Asn	Asn Asn Asn Asn Asn	Asn Asn Asn Asp Asn	Asn Asn Leu	
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Leu Asp	Glu Lys Arg Asp Arg	Val Lys Glu Asn Val	Val Asp Leu	
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Phe Cys	Gly Val Gly Tyr Phe	Thr Leu Pro Leu Leu	Lys Cys Ile	
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Glu Ala	Gln Asn Lys Ile Asn	Asn Tyr Phe Ala Cys	Asp Ile Asn	
1670		1675		1680
Pro Asp	Ser Leu Lys Leu Leu	Arg Glu Ser Ile Lys	Leu Asn Asn	
1685		1690		1695
Ile Asn	Lys Lys Asn Ile Tyr	Ile Ile Lys Gln Asn	Ser Phe Met	
1700		1705		1710
Leu Ser	Lys Asn Val Gln Met	Val Arg Lys Cys His	Arg Ile Ile	
1715		1720		1725
Leu Gly	Leu Leu Pro His Ser	Gln Pro Ala Trp Lys	Asn Ala Phe	
1730		1735		1740
Phe Leu	Leu Asp Asn Lys Tyr	Gly Gly Ile Leu His	Ile His Gly	
1745		1750		1755
Ile Gly	Gln His Ile Phe Asp	Glu Gln Val Cys Phe	Ser Ser Ile	
1760		1765		1770
Asn Thr	Tyr Asp Tyr Ile Leu	Lys Lys Lys Asp Val	Asn Ile Ser	

1775 1780 1785
 Ser Ile Asn Lys Leu Thr Lys Leu Gln Met Val Glu Glu Tyr Val
 1790 1795 1800
 Ser Asn Val Glu Asp Ser Asn Tyr Val Glu Glu Ile Lys Lys Asn
 1805 1810 1815
 Lys Asp His Phe His Asn Lys Tyr Ile Asn His Tyr Asn Ser Asn
 1820 1825 1830
 Tyr Asn Lys Lys Leu Tyr Leu Gly Asn Asn Ile Pro His Asn Leu
 1835 1840 1845
 Ser Phe Ala Gln Tyr Thr Leu Ile Glu Ile Phe Lys Ile Ala Leu
 1850 1855 1860
 Tyr Asp Asn Leu Lys Asn Asn Ile Phe Trp Asn Ile Ala Ile Ser
 1865 1870 1875
 His Val Glu Arg Val Lys Ser Tyr Ala Pro Arg Met Tyr His Tyr
 1880 1885 1890
 Val Val Asp Ile Lys Cys Asp Pro Leu Ile Phe
 1895 1900
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 <213> Plasmodium falciparum
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 Phe Leu Leu Tyr Ile Leu Phe Leu Val Lys Met Asn Ala Leu Arg Arg
 20 25 30
 Leu Pro Val Ile Cys Ser Phe Leu Val Phe Leu Val Phe Ser Asn Val
 35 40 45
 Leu Cys Phe Arg Gly Asn Asn Gly His Asn Ser Ser Ser Ser Leu Tyr
 50 55 60
 Asn Gly Ser Gln Phe Ile Glu Gln Leu Asn Asn Ser Phe Thr Ser Ala
 65 70 75 80

Phe Leu Glu Ser Gln Ser Met Asn Lys Ile Gly Asp Asp Leu Ala Glu
85 90 95

Thr Ile Ser Asn Glu Leu Val Ser Val Leu Gln Lys Asn Ser Pro Thr
100 105 110

Phe Leu Glu Ser Ser Phe Asp Ile Lys Ser Glu Val Lys Lys His Ala
115 120 125

Lys Ser Met Leu Lys Glu Leu Ile Lys Val Gly Leu Pro Ser Phe Glu
130 135 140

Asn Leu Val Ala Glu Asn Val Lys Pro Pro Lys Val Asp Pro Ala Thr
145 150 155 160

Tyr Gly Ile Ile Val Pro Val Leu Thr Ser Leu Phe Asn Lys Val Glu
165 170 175

Thr Ala Val Gly Ala Lys Val Ser Asp Glu Ile Trp Asn Tyr Asn Ser
180 185 190

Pro Asp Val Ser Glu Ser Glu Glu Ser Leu Ser Asp Asp Phe Phe Asp
195 200 205

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<211> 2404
<212> PRT
<213> Plasmodium falciparum

<400> 3

Met Asp Leu Met Asn Asp Glu Tyr Asp Ile Asp Asp Pro Lys Glu Arg
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Asn Ile Ile Lys Gly Asp Tyr Asp Asp Asp Asn Met Gly Asn Asn Gly
20 25 30

Phe Ser Ile Ile Asn Ser Tyr Lys Asp Ile Asp Val Asn Asp Val Asn
35 40 45

Asp Leu Glu Ser Ile Val Lys Asn Asp Glu Ile Ser Val Asp Arg Lys
50 55 60

Leu Glu Tyr Phe Tyr Ser Lys Leu Asn Ser Asn Ile Phe Asp Ile Phe
65 70 75 80

Arg Ile Val Ala Asp Tyr Glu Asn Ile Tyr Ile Ile Ser Gly Glu Gly
 85 90 95

Leu Ile Ile Tyr Val Cys Met Leu Leu Ser Lys Phe Tyr Ser Phe Lys
 100 105 110

Asn Glu Glu Asp Lys Asn Ile Leu Ser Phe Asp Asn Ser Leu Asn Met
 115 120 125

Ile Ser Val Val Tyr Tyr Ile Glu Lys Ile Leu Ser Asp Ile Cys Ala
 130 135 140

Cys Asn Ser Asn Phe His Ile Ile Phe Phe Asn Val Phe Asn Ile Phe
 145 150 155 160

Phe Glu Lys Lys Lys Asn Lys Leu Phe Gln Asn Tyr Asn Leu Leu Arg
 165 170 175

Asn Ala Phe Ile Ile His Cys Lys Lys Asn Leu Ile Pro Tyr Phe Ile
 180 185 190

Phe Asn Asn Trp Tyr Asn Asp Glu Asn Tyr Asn Ile Tyr Leu Ile Lys
 195 200 205

Tyr Lys Pro Leu Phe Met Phe Val Glu Asp Ser Ser Ser Phe Leu Tyr
 210 215 220

Ala Phe Asn Lys Tyr Tyr Val Ser Asn Val Asn Thr Asp Asn Lys Glu
 225 230 235 240

Asn Asn Val Asn Ile Asn Gln Glu Lys Lys Asn Ile Phe Val Asp Asn
 245 250 255

Asp Lys Asn Ile Asn Gly Asp His Tyr Asp Asp Asp Val Glu Asn Ile
 260 265 270

Glu Lys Lys Lys Asn Tyr Lys Glu Tyr Ile Tyr Lys Lys Asn Ile Tyr
 275 280 285

Asp Ser Tyr Asn Asn Asp Ile Arg Glu Met Ser Leu Cys Phe Tyr Phe
 290 295 300

Leu Leu Leu Asn Asn Ile Leu Arg Asp Ile Lys Cys Val Phe Phe Phe
 305 310 315 320

Asn Leu Glu Ser Glu Lys Asn Thr Ile Asn Ala Phe Ser Ile Asn Tyr

Ser Gln Asp Val Phe Ile Ile Glu Tyr Asp Asp Met Pro Phe Glu Asp
565 570 575

Lys Asp Asn Phe Glu Met Ser Tyr Lys Asn Ile Leu Lys Glu Lys Tyr
 580 585 590

Glu Cys Leu Phe Pro Ile Asp Leu Ser Phe Leu Arg Asp Asp Ile Asn
 595 600 605

Met Leu Cys Lys Arg Gly Asp Ala Thr Asn Asp Asp Asn Glu Asp Asn
 610 615 620

Ile Ile Asn Ser Asn Asp Asp Arg Leu Glu Val Val Ser Lys Lys Lys
 625 630 635 640

Glu Val Asn Asp Asp Asn Lys Asn Ile Val Thr Ile Asn Leu Ile Arg
 645 650 655

Ile Lys Asn Glu Leu Val Glu Thr Phe Phe Tyr Leu Asn Asp Ile Ser
 660 665 670

His Asn Asn Asn Asn Asn Asn Asn Cys Glu Val Asp Asn Met Ile Glu
 675 680 685

Glu Lys Lys Arg Glu Met Val Leu Lys Ile Ile Phe Ile Asn Lys Cys
 690 695 700

Leu Glu Tyr Asp Asn Asn Phe Phe Glu Leu Thr Gly Met Leu His Ile
 705 710 715 720

Ser Glu Arg Glu Asn Val Val Asp Ile Phe Asn Ser Tyr Met Lys Leu
 725 730 735

Ser Ser Leu Ser Arg Asn Leu Pro Phe Ala Asn Gln Lys Asp Asp Lys
 740 745 750

Tyr Lys Leu Arg Arg Gln Gln Lys Asp Glu Arg Arg Lys Ala Ile Ile
 755 760 765

Ala Lys Tyr Phe Tyr Ile Ser Ser Leu His His Pro Ile Val Ile Ser
 770 775 780

Glu Asn His Pro Trp Ile Lys Tyr Tyr Ser Tyr Asn Ile Glu Lys Leu
 785 790 795 800

Tyr Asp Tyr Leu Arg Asn Glu Glu Lys Lys Lys Gly Ile Thr Gln Arg
 805 810 815

Met Lys Val Leu Phe Asp Ser Ser Ser Glu Arg Glu Asp Asp Glu Lys
 820 825 830

Asp Gly Asp His Glu Ile Val Lys Ile Ser Asn Ile Ser Ser Asp Leu
 835 840 845

Lys Asn Lys Asn Lys Lys Asn Lys Arg Leu Ser Asp Ser Lys His Thr
 850 855 860

Asn Glu Lys Thr Ile Met Lys Lys Lys Leu Cys Thr Asn Ile Lys Leu
 865 870 875 880

Lys Lys Asn Asn Asp Ile Phe Glu Ile Leu Asp Asp His Phe Asp Glu
 885 890 895

Asp Ser Asp Arg Pro Glu Asp Met Asn Ser Ile Asn Glu His Gly Asn
 900 905 910

Lys Lys Glu Asp Ser Ser Asn Lys Lys Gly Lys Asn Glu Thr Lys Val
 915 920 925

Gly Lys Lys Gly Ser Lys Asn Ser Asn Ala Thr Thr Leu Ser Arg Lys
 930 935 940

Asp Glu Ile Leu Lys Lys Lys Glu Leu Ser Asn Glu Lys Lys Thr Tyr
 945 950 955 960

Glu Val Asp Leu Glu Arg Tyr Asn Asn Leu Glu Gln Lys Ile Val Lys
 965 970 975

Leu Ala Ser Asp Asp Ser Tyr Ala Glu Met Asn Val Trp Ser Leu Asp
 980 985 990

Ile Ile Ser Gly Tyr Asn Arg Leu Val Asp Val Tyr Asn Phe Asn Asn
 995 1000 1005

Ile Thr Asn Leu Ile Lys Ser Val Asp Leu Gln Ile Lys Ile Ser
 1010 1015 1020

Met Lys Val Leu Asn Ser Met Phe His Ile Ile Met Tyr Thr Lys
 1025 1030 1035

Leu Lys Asn Ile Lys Thr Gly Lys Gln Lys Ser Asp Ala Ile Arg
 1040 1045 1050

Ser	Ile	Ile	Leu	Ile	Tyr	Arg	Leu	Thr	Asn	Asp	Ile	Phe	Asn	Lys
1055						1060					1065			
Phe	Lys	Glu	His	Leu	Ser	Glu	Lys	Asp	Val	Val	Gln	Ile	Gln	Thr
1070						1075					1080			
Val	Leu	Leu	Ser	Leu	Gly	Phe	Gln	Asn	Ser	Ser	Tyr	Asn	Leu	Phe
1085						1090					1095			
Glu	Glu	Tyr	Val	Lys	Leu	Lys	Lys	Asp	Thr	Tyr	Asn	Ala	Ser	Ser
1100						1105					1110			
Asn	Asp	Gly	Lys	Asp	Glu	Ala	Gly	Asn	Lys	Val	Asp	Glu	Cys	Val
1115						1120					1125			
Ser	Ser	Gly	Lys	Lys	Gly	Lys	Glu	Asn	Lys	Lys	Glu	Glu	Ser	Asn
1130						1135					1140			
Ser	Lys	Lys	Lys	Ile	Ser	Lys	Gly	Lys	Lys	Glu	Asn	Asn	Asp	Thr
1145						1150					1155			
Lys	Asp	Val	Asn	Leu	Lys	Lys	Ala	Ser	Lys	Lys	Gly	Asp	Val	Asn
1160						1165					1170			
Asn	Ser	Asn	Ser	Ile	Ile	Lys	Ser	Leu	Asp	Asp	Ile	Tyr	Lys	Tyr
1175						1180					1185			
Lys	Leu	Glu	Ser	Val	Lys	Thr	Tyr	Ser	Glu	Leu	Lys	Ile	Asp	Glu
1190						1195					1200			
Asn	Lys	Glu	His	Glu	Phe	Gln	Leu	Tyr	Tyr	Met	Tyr	Tyr	Leu	Leu
1205						1210					1215			
Asp	Arg	Thr	Thr	Gly	Asn	Ile	Lys	Asp	Ser	Arg	Val	Leu	Phe	Thr
1220						1225					1230			
Leu	Asp	Thr	Trp	Gln	Tyr	Asn	Ile	Leu	Asn	Leu	Val	Asp	Arg	Arg
1235						1240					1245			
Lys	Ser	Ile	Leu	Val	Ser	Cys	Pro	Thr	Ser	Ser	Gly	Lys	Thr	Phe
1250						1255					1260			
Ile	Cys	Tyr	Tyr	Val	Met	Asp	Lys	Val	Leu	Arg	Leu	Asn	Asn	Asp
1265						1270					1275			

Ser Val	Val Ile Tyr Val	Ala	Pro Asn Asp Thr	Leu	Ala Leu Gln
1280		1285		1290	
Ile Tyr	His Glu Val Asn Gly	Arg Phe Ser Thr	Lys	Gly Tyr Ser	
1295		1300	1305		
Lys Tyr	Gly Gly Asn Lys	Leu	Cys Ser Tyr Met	Thr	Asp Lys Tyr
1310		1315		1320	
Ala Glu	Glu Lys Ala Leu	Asp	Ser Gln Ile Ile	Ile	Ile Leu Pro
1325		1330		1335	
Ser Ile	Leu Glu Asn Ile	Leu	Leu Ser Tyr Tyr	Ala	Leu Asn Asp
1340		1345		1350	
Met Asn	Glu Asn Met Asn	Val	Ser Lys Phe Ile	Ser	Lys Ile Glu
1355		1360		1365	
Tyr Ile	Ile Phe Asp Glu	Ile	His Cys Ile Gly	Asp	Lys Glu Phe
1370		1375		1380	
Tyr Gly	Ser Gln Ile Glu	Asn	Ile Ile His Leu	Ile	Asn Cys Pro
1385		1390		1395	
Phe Leu	Ala Leu Ser Ala	Thr	Ile Gly Asn Ile	Asn	Cys Phe Tyr
1400		1405		1410	
Ser Trp	Leu Gln Asn Val	Leu	Leu Lys Lys Gly	Arg	Ser Ile Asn
1415		1420		1425	
Asp Leu	His Leu Ile Lys	Phe	Tyr Glu Arg Phe	Ser	Asp Leu Ile
1430		1435		1440	
Leu Tyr	Val Tyr Thr Asn	Lys	Asn Leu His His	Leu	Asn Pro Leu
1445		1450		1455	
Thr Cys	Phe Asn Phe Arg	Asp	Ile Leu Tyr Lys	Gly	Ile Asn Lys
1460		1465		1470	
Asp Phe	Tyr Cys Asn Pro	Arg	Glu Ile Tyr Glu	Ile	Ile Ile Ile
1475		1480		1485	
Leu Phe	Glu Leu Ala Arg	Lys	Lys Asn Phe Tyr	His	Leu Val Glu
1490		1495		1500	
Phe Leu	Glu Pro Ser Phe	Tyr	Phe Gln Tyr Thr	Arg	Cys Ile Asn

1505		1510		1515
Lys Lys Lys Phe Ile Tyr Tyr Met His Ser Val Lys Glu Met Ile				
1520		1525		1530
Val Tyr Leu Ile Gln Asn Asn Tyr Ile Asn Asn Leu Glu Tyr Asp				
1535		1540		1545
Met Ile Ile His Ile Leu Leu Ser Asn Tyr Met Lys Asn Ser Phe				
1550		1555		1560
Tyr Ile Lys Asp Glu Asn Glu Glu Asp Ile Glu Arg Lys Asn Lys				
1565		1570		1575
Ile Asn Asp Asn Asn Asn Asn Asn Ile Asn Cys Asp Asn Thr Lys				
1580		1585		1590
Asn Asn Val Asp Asp Glu Asp Val Lys Thr Asn Asp Lys Val Ile				
1595		1600		1605
Lys Lys Ser Asp Lys Val Val Val Lys Asn Leu Tyr Lys Ser Thr				
1610		1615		1620
Ile Arg Asp Asn Val Pro Lys Glu Lys Leu Phe Gln Glu Leu Tyr				
1625		1630		1635
Lys Arg Val Asn Phe Asp Glu Lys Tyr Ile Ser Asn Arg Thr Asn				
1640		1645		1650
Asp Leu Val Lys Tyr Thr Glu Met Val Asn Met Glu Gln Glu Tyr				
1655		1660		1665
Leu Asp Ser Asp Lys Leu Ile Glu Leu Leu Lys Lys Leu Glu Asp				
1670		1675		1680
Ile Asn Phe Leu Pro Cys Ile Val Phe Asn Phe Glu Arg Lys Glu				
1685		1690		1695
Leu Glu Asp Met Thr Ile Asn Leu Ile Asn Glu Leu Met Lys Arg				
1700		1705		1710
Gln His Asp Lys Tyr Tyr Gly Asp Glu Glu Arg Ala Phe Asn Thr				
1715		1720		1725
Lys Met Glu Asn Lys Met Arg Arg Glu Lys Tyr Glu Asn Met Leu				
1730		1735		1740

Lys	Gln	Arg	Glu	Met	Leu	Leu	Lys	Met	Lys	Ser	Met	Ser	Arg	Asn
1745						1750					1755			
Gln	Arg	Leu	Glu	Gln	Asn	Ile	Asp	Lys	Glu	Tyr	Leu	Asp	Met	Leu
1760						1765					1770			
Ile	Asp	Asp	Glu	Ile	Pro	Glu	Pro	Pro	Leu	Asp	Val	Ser	Glu	Glu
1775						1780					1785			
Tyr	Asp	Lys	Asp	Phe	Tyr	Phe	Cys	Asn	Gln	Lys	Val	Tyr	Cys	Asn
1790						1795					1800			
Tyr	Val	Thr	Glu	Ile	Glu	Asp	Leu	Ile	Lys	Asp	Ala	Gln	Lys	Ala
1805						1810					1815			
Ile	Glu	Gly	Arg	Lys	Tyr	Lys	Ser	Ile	Leu	Ile	Glu	Gly	Leu	Arg
1820						1825					1830			
Arg	Gly	Ile	Gly	Leu	His	Tyr	Glu	Val	Leu	Pro	Tyr	Lys	Phe	Thr
1835						1840					1845			
Ile	Ile	Val	Glu	Ser	Leu	Phe	Arg	Leu	Gly	Phe	Val	Lys	Ile	Ile
1850						1855					1860			
Phe	Ser	Asn	Lys	Asn	Leu	Ser	Leu	Gly	Ile	Asn	Ile	Pro	Cys	Arg
1865						1870					1875			
Ser	Ile	Ile	Phe	Ala	Gly	His	Thr	Ile	Glu	Leu	Asn	Ser	Leu	Met
1880						1885					1890			
Phe	Lys	Gln	Thr	Ser	Gly	Arg	Ala	Gly	Arg	Arg	Gly	Phe	Asp	Leu
1895						1900					1905			
Tyr	Gly	Asn	Ile	Ile	Ile	Trp	Asn	Ile	Asn	Phe	Lys	Asn	Leu	Lys
1910						1915					1920			
Arg	Leu	Ile	Thr	Ser	Pro	Leu	Gln	Thr	Leu	Ser	Gly	Thr	Tyr	Ser
1925						1930					1935			
Val	Asn	Phe	Thr	Asn	Ile	Cys	Arg	Ser	Met	Leu	Leu	Tyr	Asn	Ser
1940						1945					1950			
Leu	Lys	Arg	Ile	Arg	Glu	Asn	Glu	Glu	Gly	Ser	Leu	Lys	Asn	Lys
1955						1960					1965			

Val 1970	Ile	Val	Asn	Lys	Pro	Asn 1975	Lys	Lys	Lys	Lys	Lys 1980	Asp	Glu	Thr
Leu 1985	Ser	Val	Ala	Glu	Lys	Glu 1990	Glu	Ile	Phe	Glu	Lys 1995	Asn	Arg	Ala
Ile 2000	Asn	Val	Asn	Tyr	Phe	Ser 2005	Arg	Ile	Asn	Gly	Ile 2010	Leu	Ser	Leu
Phe 2015	Phe	Asn	Ser	Leu	Tyr	Tyr 2020	Ile	Asn	Ser	Phe	Gln 2025	Glu	Ser	Glu
Gln 2030	Asn	Tyr	Asn	Asn	Met	Asn 2035	Asn	Val	Val	Val	Ser 2040	Gly	Asp	Asn
Val 2045	Cys	Ser	Leu	Thr	Thr	Asn 2050	Cys	Gln	Asn	Gly	Asn 2055	Glu	Asn	Gly
Lys 2060	Gly	His	Ile	Asn	Asn	Ile 2065	Ser	Thr	Cys	Thr	Thr 2070	Thr	Ser	Thr
Ser 2075	Ser	Val	Asn	Asn	Met	Glu 2080	Asn	Asn	Asn	Asn	Ser 2085	Asn	Met	Asn
Gly 2090	Cys	Gly	Asp	Lys	Lys	Ser 2095	Glu	Gly	Ser	Glu	Arg 2100	His	Glu	Met
Ile 2105	Gln	His	Ile	Leu	His	Glu 2110	Phe	Asn	Glu	Tyr	Lys 2115	Glu	Asn	Asp
Lys 2120	Leu	Ser	Lys	Phe	Ile	Asn 2125	Arg	Glu	Tyr	Glu	Tyr 2130	Asn	Glu	Leu
Leu 2135	Val	Glu	Leu	Leu	Thr	Asn 2140	Arg	Lys	Met	Lys	Asn 2145	Asn	Lys	Leu
Gln 2150	Glu	Glu	Lys	Glu	Ile	Asn 2155	Glu	Leu	Cys	Phe	Met 2160	Thr	Arg	Ala
His 2165	Phe	His	Ile	Phe	Leu	Asn 2170	Val	Leu	Ile	Glu	Met 2175	Glu	Ala	Leu
Asp 2180	Glu	Glu	Gly	Asn	Ile	Ile 2185	Asn	Leu	Thr	Glu	Leu 2190	Ser	Ile	Phe

Leu Lys Lys Glu Tyr Asp Asn Asn Leu Ile Ile Thr Tyr Leu Leu
 2195 2200 2205
 Ile Lys Lys Val Leu His Asn Ile Ile Gly Asp Asn Thr Phe Leu
 2210 2215 2220
 Ser Ser Ser Val Val Ile Ser Leu Asn Arg Ile Ile Asp Ser Ile
 2225 2230 2235
 Thr Phe Glu Lys Asn Tyr Tyr Arg Ser Ile Ile Val Asp Asp Ser
 2240 2245 2250
 Thr Arg Gly Gln Phe Ile Leu Leu Phe Ile Leu Ser His Phe Ile
 2255 2260 2265
 Asn Lys Arg Lys Glu Asn Lys Ile Ala Leu Thr Lys Ala Leu Ile
 2270 2275 2280
 Asn Ser Gln Tyr Glu Glu Asn Lys Ser Lys Leu Glu Leu Phe Ser
 2285 2290 2295
 Ser Tyr Tyr Phe Pro Leu Leu His Ala Leu Pro Thr Ser Ile Gln
 2300 2305 2310
 Lys His Ile Asp His Ile Glu Asn Ile Leu Leu Lys Tyr Leu Val
 2315 2320 2325
 Asn Tyr Cys Leu Val Val Leu Ile Lys Leu Asn Leu Leu Asn Lys
 2330 2335 2340
 Lys Lys Ala Asn Leu Leu Pro Tyr Thr Lys Leu Tyr Ile Phe Glu
 2345 2350 2355
 Gln His Pro Cys Val Ser Leu Lys Asp Ile Phe Pro Lys Lys Glu
 2360 2365 2370
 Asn Ala Asp Tyr Phe Lys Phe Tyr Lys Ser Lys Val Ile Ile Ile
 2375 2380 2385
 Tyr Ile Tyr Ile Tyr Ile Lys Ile Tyr Val Cys Ile Tyr Tyr Leu
 2390 2395 2400

Thr

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 <213> Plasmodium falciparum

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Ala Leu Phe Gln Glu Tyr Gln Cys Tyr Gly Ser Ser Ser Asn Thr Arg
 20 25 30

Val Leu Asn Glu Leu Asn Tyr Asp Asn Ala Gly Thr Asn Leu Tyr Asn
 35 40 45

Glu Leu Glu Met Asn Tyr Tyr Gly Lys Gln Glu Asn Trp Tyr Ser Leu
 50 55 60

Lys Lys Asn Ser Arg Ser Leu Gly Glu Asn Asp Asp Gly Asn Asn Glu
 65 70 75 80

Asp Asn Glu Lys Leu Arg Lys Pro Lys His Lys Lys Leu Lys Gln Pro
 85 90 95

Ala Asp Gly Asn Pro Asp Pro Asn Ala Asn Pro Asn Val Asp Pro Asn
 100 105 110

Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Val Asp Pro Asn
 115 120 125

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 130 135 140

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 145 150 155 160

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 165 170 175

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 180 185 190

Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 195 200 205

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 210 215 220

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 225 230 235 240

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 245 250 255

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
 260 265 270

Lys Asn Asn Gln Gly Asn Gly Gln Gly His Asn Met Pro Asn Asp Pro
 275 280 285

Asn Arg Asn Val Asp Glu Asn Ala Asn Ala Asn Ser Ala Val Lys Asn
 290 295 300

Asn Asn Asn Glu Glu Pro Ser Asp Lys His Ile Lys Glu Tyr Leu Asn
 305 310 315 320

Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro Cys Ser Val Thr
 325 330 335

Cys Gly Asn Gly Ile Gln Val Arg Ile Lys Pro Gly Ser Ala Asn Lys
 340 345 350

Pro Lys Asp Glu Leu Asp Tyr Ala Asn Asp Ile Glu Lys Lys Ile Cys
 355 360 365

Lys Met Glu Lys Cys Ser Ser Val Phe Asn Val Val Asn Ser Ser Ile
 370 375 380

Gly Leu Ile Met Val Leu Ser Phe Leu Phe Leu Asn
 385 390 395

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 <223> Unknown

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<222> (353)..(353)

<223> Unknown

<400> 5

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Ile Lys Thr Met Asn Asn Tyr Met Ile Lys Lys Leu Leu Lys Ile Trp
 20 25 30

Lys Asn Tyr Met Lys Ile Met Asn His Leu Met Thr Leu Tyr Gln Ile
 35 40 45

Gln Val Met Lys Arg Asn Gln Lys Gln Lys Gln Val Gln Met Met Ile
 50 55 60

Met Ile Lys Phe Met Gly Val Ile Tyr Ile Met Ile Ile Ser Lys Lys
 65 70 75 80

Met Met Arg Lys Xaa Lys Lys Lys Lys Lys Lys Ser Thr Arg Thr Gln
 85 90 95

Ala Lys Ser Leu Asp Thr Lys Leu Ile Asp Lys Asp Leu Met Asn Thr
 100 105 110

Lys Gln Ile Glu Lys Glu Leu Leu Asp Thr Xaa Leu Ile Glu Asn Glu
 115 120 125

Phe Ile His Asn Lys Leu Phe Asp Thr Asp Met Ile Glu Lys Glu Leu
 130 135 140

Met Asp Thr Glu Leu Ile Glu Asn Glu Leu Met Asn Tyr Glu Leu Phe
 145 150 155 160

Asp Lys Asp Thr Phe Phe Lys Glu Asn Tyr Phe Asn Asp Glu Gln Gln
 165 170 175

Arg Thr Asp Glu Ser Asn Val Asp Gln Gln Asn Asp Met Tyr Val Ile
 180 185 190

Lys Asn Asn Lys Asp Ser Met Lys Gly Asp Tyr Tyr Ile Lys Lys Lys
 195 200 205

Lys Lys Lys Leu Val Thr Asp Asn Thr Lys Asp Leu Asn Lys Cys Ser
 210 215 220

Ser Tyr Lys Ser Ser Lys Arg Asp Lys Phe Phe Glu Asn Ile Lys Arg
225 230 235 240

Glu Asn His Met Asp Asp Gln His Asn Glu Asn Ile Tyr Ile Asn Ile
245 250 255

Lys Asn Asn Lys Ser Thr His Thr Tyr Lys Lys Lys Asn Asn His Ile
260 265 270

Phe His Lys Asn Val Tyr Tyr Asn Ile Leu Ile Val Leu Tyr Tyr Leu
275 280 285

Phe Asn Gln His Ile Lys Lys Glu Leu Tyr His Phe Asn Met Leu Lys
290 295 300

Asn Lys Met Gln Ser Ser Phe Phe Met Asn Arg Phe Tyr Ile Thr Thr
305 310 315 320

Arg Tyr Lys Tyr Leu Asn Lys Lys Tyr Ile Asn Phe Ile Asn Phe Ile
325 330 335

Lys Val Leu Lys Glu Asn His Glu Gln Lys Leu Ser Glu Tyr Tyr Asp
340 345 350

Xaa Asp Ile Tyr Gln Lys Leu Tyr Ile Lys Gln Glu Glu Gln Lys Lys
355 360 365

Tyr Ile Tyr Asn Leu Ile Met Asn Thr Gln Asn Lys Tyr Glu Ala Leu
370 375 380

Ile Lys Leu Leu Pro Phe Ser Lys Arg Ile Arg Lys Lys Ser Ile Phe
385 390 395 400

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<212> PRT
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<400> 6

Met Lys Glu Asn Ile Phe Asp Thr Lys Lys Lys Asn Asn Asn Arg Lys
1 5 10 15

Arg Asn Ile Ile Arg Ser Ala Lys Trp Asn Asn Lys Asn Ser Lys Ile
20 25 30

Glu Leu Ser Lys Lys Arg Asp Ser Ser Asn Lys Tyr Lys Ser Ile Leu
 35 40 45

Lys Tyr Tyr Lys Asn Glu Asn Lys Thr Asn Lys Phe Ile Asp Lys Arg
 50 55 60

Lys Lys Asn Lys Trp Phe His Lys Asn Arg Lys Leu Gln Lys Lys Asn
 65 70 75 80

Ile Phe Asn Leu Asn Asp Asp Val Leu Phe Lys Glu Arg His Ile Ser
 85 90 95

Thr Asn Asp Phe Ile His Ser Asp Asn Ser Leu Lys Glu Thr Asp Gln
 100 105 110

Glu Asn Leu Asn Asp Asn Lys Lys Lys Gly Asn Lys Lys Tyr Asn Ala
 115 120 125

Met Leu Asp Lys Ile Glu Glu Lys Lys Leu Trp Lys Leu Lys Lys Tyr
 130 135 140

Glu Ile Lys Glu Lys Leu Arg Lys Phe Asp Glu His Phe Asp Glu Ile
 145 150 155 160

Gln Lys Asn Val Leu Gly Leu Asn Gly Thr Lys Gly Gly Ala Lys His
 165 170 175

Ser Met Val Ile Glu Asn Asn Lys Asn Lys Leu Asn Lys Val Ile His
 180 185 190

Glu Ser Lys Lys Arg Gln Asn Phe Glu Ile His Ala Ser His Lys Gly
 195 200 205

Ile Gly Ala Glu Lys Gly Lys Gln Asn Cys Tyr Asp Asp Gly Asp Asp
 210 215 220

Glu His Phe Asp Asp Asp Asp Asp Glu Gln Leu Asp Asp Gly Asp Asp
 225 230 235 240

Glu Gln Leu Asp Asp Asp Asp Asp Glu Gln Leu Asp Asp Asp Asp Asp
 245 250 255

Glu Gln Leu Asp Asp Asp Asp Asp Glu Gln Leu Asp Asp Asp Asp Asp
 260 265 270

Glu Gln Leu Asp Asp Ser Asp Asp Glu Ile Tyr Asp Asn Gln Lys Glu

275	280	285
Tyr Ser His Asp Asp Glu Met Tyr Asn Asp Glu Lys Asn Val Asp Lys		
290	295	300
Ala Asn Tyr Pro Lys Thr Thr Ser Asp Ser Gln Asn Glu Leu Thr Asn		
305	310	315
Tyr Asn Ser Tyr His Thr Asp Asn Ser Asp Asn Glu Glu Ile Thr Lys		
	325	330
Leu Phe Asn Lys Glu Thr Leu Arg Ser Lys Lys Lys Gly Ser Asn Glu		
	340	345
Asn Ile Ser Lys Glu Lys Leu Asn Glu Leu Leu Glu Lys Tyr Lys Ile		
	355	360
Gly Asp Asn Ile Asn Ile Cys Asn His Phe Ile Asn Asn Thr Glu Glu		
	370	375
Glu Lys Gln Asn Ile Pro Ile Tyr Ile Tyr Ile Lys Asn Lys Glu Tyr		
385	390	395
Asp Ile Lys Asp Val Ile Leu Leu Leu Asp Asp Tyr His Phe Glu Thr		
	405	410
Gln Gln Lys Ile Leu Tyr Arg Ile Tyr Tyr Ile Asn Met Phe Asn Lys		
	420	425
Lys Gly Thr Lys Ser Ile Tyr His Phe Ser Phe Phe Phe Ser Leu Ile		
	435	440
Asp Tyr Phe Ile Leu Asn Ile Tyr Lys Cys Leu Lys Tyr Asn Ile Lys		
	450	455
Val Cys Glu Leu Leu Gly Tyr Tyr Lys Asp Ile Ile Val Lys Tyr Cys		
465	470	475
His Glu Met Lys Ala Glu Phe Tyr Leu Tyr Ile Ser Phe Leu Leu Leu		
	485	490
Ile Val Phe Ser Lys Ile Gln Arg Lys Ile Lys Thr Asn Ile Phe Phe		
	500	505
Lys Lys Lys Lys Lys Ile Leu Gln Asp Tyr Val Ile Leu Asn Glu Asp		
	515	520
		525

Asn Ala Asn Arg Lys Ile Asp Val Tyr Ile Tyr Arg Arg Ile Leu Lys
 530 535 540

Ser Val Asp Met Phe Ser Ser Ile Phe Glu Asn Tyr Asn Asn Glu Asn
 545 550 555 560

Ile Tyr Ile Ser Asn Ile His Phe Ala Val Leu Phe Leu Thr Leu Thr
 565 570 575

Val Tyr Pro Ile Asn Asn Phe Ile Asp Asp Asn Asn Met Ser Asn Val
 580 585 590

Val Glu Asn Lys Ile Leu Asn Pro Gln Lys Asn Leu Ile Ile Asn Asn
 595 600 605

Asn Pro Phe Leu Asp Ile Asn Lys Asn Asn Ile Asn Asp Glu Lys Leu
 610 615 620

Leu Tyr Lys Met Asn Tyr Leu Lys Gln Asp Ile Asn Asn Ile Asn Asn
 625 630 635 640

Tyr Asn Gln Gln Lys His Pro Ile Ile Ser Phe Ile Ile Glu Ile Leu
 645 650 655

Glu Leu Leu Phe Tyr Asn His Phe Tyr Thr Asn Asn Ala Asn Leu Leu
 660 665 670

Asn Leu Lys Asp Tyr Gln Lys Tyr Asp Trp Val Phe Asn Met Asn Thr
 675 680 685

Tyr Glu Asn Tyr His Asn Ile Glu Ala Cys Leu Lys Lys Leu Glu Val
 690 695 700

Tyr Tyr Ser Phe Ser Ser Phe Glu Asp Val Ile Cys Glu Asn Asn Lys
 705 710 715 720

Gly Gly Lys Glu Phe Glu His Asn Glu Ile Asn Asn Glu Ile Val Asn
 725 730 735

Asp Leu Gly Ile Phe Tyr Arg Lys Lys Glu Phe Lys Asn Ser Leu Ile
 740 745 750

Leu Leu Asn Leu Tyr Asn Ile Ile Met Glu Asn Thr Leu Glu Tyr Asn
 755 760 765

Pro Ser Phe Phe Tyr Leu Ser Phe Lys Ile Leu Asn Thr Leu Leu Tyr
 770 775 780

Asn His Ile Thr Ser Ile Lys Glu Gly Ile Leu Asp Lys Asn Lys Ile
 785 790 795 800

Pro His Val Ser Glu Lys Glu Lys Gln Lys Ile Gln Thr Ile Asn Asn
 805 810 815

Ser Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn
 820 825 830

Asn Ile Ser Asn Asn Met Tyr Asp Lys Phe Asp Leu Ser Phe Ile Ile
 835 840 845

Phe Lys Asn Ile Phe Phe Phe Leu Lys Ile Tyr Ile Asp Asn Asp Ile
 850 855 860

Asn Ile Tyr Ile Leu Ile Asn His Val Ile Ile Pro Ser Leu Phe Tyr
 865 870 875 880

Leu Tyr Met Asn Phe Leu Lys Phe Ile Val Thr Asn His Ile Lys Leu
 885 890 895

Asp Phe Ile Asn Ile Ile Asn Val Ala Lys Asn Ile Asn Ile Lys Glu
 900 905 910

Gly Asn Asp Phe Leu Phe Glu Glu Asp Lys Thr Tyr Glu Leu Tyr Gln
 915 920 925

Lys Tyr Leu Ile Ile Leu Leu Tyr Ile Phe Lys Leu Ile Glu Tyr Ser
 930 935 940

Gln Asn His Asp Ile Lys Pro Ile Ile His Lys Thr Thr Thr Glu Gly
 945 950 955 960

Asn Ile Ser Phe Phe Thr Pro Lys Tyr Ala Asn Asn Gln Asn Pro Lys
 965 970 975

Asp Phe Ile Phe Met Gln Asn Asn Gln Thr Lys Leu Ala Glu Met Lys
 980 985 990

Ser Ile Lys Lys Lys Met Lys Gln Gln Arg Lys Phe Asp Tyr Asn Glu
 995 1000 1005

Val Ile Lys Ile Cys Thr His Ile Ser Tyr Tyr Lys Tyr Ile Tyr
1010 1015 1020

Ile Tyr Ile Tyr Ile Phe Ile Tyr Leu Phe Ile Tyr Ile Trp Leu
1025 1030 1035

His Leu Ile Ile Ile Phe Ile Phe Val Asp Glu Glu Gly Glu Gln
1040 1045 1050

Leu Tyr Leu Gly Ser Lys Ser Lys Arg
1055 1060

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<400> 7

Met Leu Val Thr Leu Arg Pro Asn Leu Val Ile Ile Arg Pro Ile Leu
1 5 10 15

Leu Ile Arg Pro Met Leu Val Lys Leu Arg Pro Lys Leu Val Lys Leu
20 25 30

Arg Pro Met Leu Val Lys Leu Gly Pro Ile Leu Val Lys Leu Arg Pro
35 40 45

Met Leu Val Lys Leu Arg Pro Met Leu Ala Lys Leu Arg Pro Met Leu
50 55 60

Ala Lys Leu Arg Pro Lys Leu Val Lys Leu Arg Pro Lys Leu Val Lys
65 70 75 80

Leu Arg Pro Ile Ser Val Asn Ala Lys Pro Gln Leu Val Asn Val Arg
85 90 95

Pro Val Leu Val Lys Ile Arg Pro
100

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<212> PRT
<213> Plasmodium falciparum

<400> 8

Met Asn His Tyr Asn Asn Asn Asn Ser Leu Tyr Asn Lys Ile Glu Tyr
1 5 10 15

Arg Lys Lys Arg Ser Phe Ala Lys Ser Lys Glu Asp Glu Arg Asn Lys
 20 25 30

Ser Glu Glu Asp Leu Ser Glu Asp Asp Lys Asn Lys Asp Tyr Ser Ser
 35 40 45

Ala Ser Glu Ser Asn Phe Tyr Lys Tyr Lys Lys Arg Lys Asn Asn Thr
 50 55 60

Tyr Glu Tyr Lys Asp Asp Lys Asp Tyr Thr Ser Tyr Asp Asn Lys Phe
 65 70 75 80

Arg Lys Ile Arg Asn Ile Asp Asp Ile Leu Glu Met Lys Pro Asn Ile
 85 90 95

Leu Leu Ser Arg Phe Ile Phe Ile Tyr Lys Leu Val Asp Asn Ile Ser
 100 105 110

Glu Asp Glu Ile Asp Glu Leu Ile Arg Asn Ile Ser Ile Asn Asn Ala
 115 120 125

Phe Ser Leu Pro Val Asn Ile Tyr Ile Asn Lys Leu Ser Phe Phe Ser
 130 135 140

Ile Lys Asp Glu Leu Phe Val Lys Glu Asn Leu Glu Phe Leu Lys Asn
 145 150 155 160

Asn Ser Tyr Phe Asn Ile Ile Gln Gln Lys Ile Gln Ser Asn Phe Leu
 165 170 175

Leu Glu Asn Arg Ile Asn Asp Asp Gln Cys Cys Ile Ile Glu Phe Pro
 180 185 190

Ser Asp Glu Ala Ser Gly Lys Leu Phe Ser Leu Tyr Glu Lys Asp Asn
 195 200 205

Cys Ile Glu Ile Lys Asn Asn Ile Ser Tyr Ile Phe Pro Leu Phe Lys
 210 215 220

Leu Lys Asn Lys Gly Lys Asn Val Glu Glu Lys Thr Gly Ser Asn Lys
 225 230 235 240

Val Ser Asp Trp Tyr Cys Ser Ala Cys Asn Phe Leu Asn Phe Ser Arg
 245 250 255

Arg Thr Ala Cys His Phe Cys Lys Ala Pro Lys Thr Ser Asp Ala Lys
 260 265 270

Leu Val Asp Lys Glu Thr Ser Thr Ile Ser Thr Phe Ile Lys Asn Asn
 275 280 285

Ile Asn His Gln Glu Asn Asn Leu Tyr Leu Ile Asn Asn Lys Asn Leu
 290 295 300

Tyr Asn Asn Met His Val Asp Lys Gly Thr Tyr Asn His Met Leu Ser
 305 310 315 320

Asp Pro Leu Asn Met Gln Lys Val Tyr Val Tyr Asn Asn Met Glu Asp
 325 330 335

Asn Tyr Glu Asn Ile Leu Asn Asp Thr Tyr Lys Asp Ala Asn Asn Asn
 340 345 350

Ile Ser Asn Asn Asn Asn Asn Asn Asn Asn Asn Asp Asn Asp Tyr Asn
 355 360 365

Asn Asn Asn Asn Asn Asn Asn Asn Ser Lys Asn Asn Asn Tyr Asn Asn
 370 375 380

Asn Tyr Asn Ser Asn Tyr Asn Arg Gly Asn Glu Asn Asn His Leu Lys
 385 390 395 400

Leu Ser Asn Asn Asn Ile Phe Phe Ser Tyr Asn Pro Phe His Lys Phe
 405 410 415

Asn Glu Asp Ser Gln Asn Tyr Glu Asn Ile Asn Lys Glu Ile Ile Cys
 420 425 430

Asp Asp Gln Asn Thr Asn Met Leu Ile Leu Lys Asn Met Asp Gly Asn
 435 440 445

Ile Leu Ile Lys Asp Phe Ile Gln Phe Leu Asn Val Thr Phe Asp Lys
 450 455 460

Asn Asp Val Ser Cys Ile Tyr Leu Phe Asn Asp Ile Lys Gly Ser Ser
 465 470 475 480

Lys Lys Lys Gly Phe Cys Phe Ile Glu Phe Tyr Asn Ile Asn Met Ala
 485 490 495

Lys Lys Val Met Asn Asn Met Glu Lys Asn Tyr Tyr Leu Asn Phe Gln

500					505					510					
Asp	Asn	Tyr	Leu	Lys	Leu	Asp	Tyr	Val	Tyr	Glu	Lys	Glu	Lys	Gln	Tyr
	515						520					525			
Phe	Phe	Asn	Cys	Ile	Gln	Met	Ala	Lys	Leu	Asp	Ile	Ser	Lys	Ser	Ser
	530					535					540				
Ala	Thr	Val	Val	Lys	Asn	Asn	Ile	Pro	Tyr	Phe	Asn	Phe	Phe	Val	Asn
545					550					555					560
Tyr	Phe	Glu	Ala	Val	Val	His	Met	Asn	Ile	His	Cys	Tyr	Thr	Tyr	Phe
				565					570					575	
Leu	Met	Trp	Ser	Ser	Gln	Ile	Ile	Ile	Leu	Lys	Lys	Gly	Lys	Pro	Glu
			580					585					590		
Leu	Ser	Glu	Phe	Phe	Phe	Asp	Tyr	Asn	Ser	Gln	Tyr	Tyr	Tyr	His	Pro
		595					600					605			
Leu	Tyr	Gln	Leu	Tyr	Phe	Asp	Asn	Asn	Thr	Lys	Tyr	Tyr	Met	Ser	Leu
	610					615					620				
Ser	Lys	Gly	Tyr	Tyr	Ile	Trp	Glu	Asp	Gly	Leu	Lys	Cys	Leu	Leu	Arg
625					630					635					640
Val	Tyr	Leu	Asp	Asn	Leu	Gly	Glu	Asn	Val	Tyr	Glu	Arg	Glu	Asn	Tyr
				645					650					655	
Asp	Lys	Lys	Phe	Ser	Leu	Met	Asp	Ala	Ser	Lys	Asn	Lys	Glu	His	Glu
			660					665					670		
Glu	Thr	His	Gln	Gln	Ala	Arg	Ile	Asn	Asp	Asp	His	Lys	Tyr	Asp	Asn
		675					680					685			
Ile	Ser	Asn	Asn	Asn	Ile	Ile	Asn	Gly	His	Met	Leu	Glu	Gln	Lys	Leu
	690					695					700				
Ser	Asn	Tyr	Lys	Ile	Glu	Lys	Glu	Asn	Glu	Lys	Lys	Asn	Asn	Asn	Glu
705					710					715					720
Asn	Val	Ile	Leu	Asn	Lys	Ile	Ser	Ser	Phe	Val	Glu	Lys	Ala	Lys	Glu
				725					730					735	
Ile	Ala	Leu	Ala	Ser	Lys	Lys	Asn	Ile	Glu	Gln	Met	Asn	Met	Asn	Asp
			740					745					750		

Asn Asn Leu Ser Ile Leu Glu Lys Lys Asn Lys Glu Ile Ile Lys Lys
 755 760 765

His Phe Thr Thr Asp Ser Ala Asp Asp Glu Asp Glu Glu Asn Asp Asn
 770 775 780

Asp Asn Asp Asn Asp Glu His Asp Asp Asp His Asp Asn Glu Lys Glu
 785 790 795 800

Asp Asn Asp Asp Glu Leu Asn Asn Val Ser Ile Lys Asn Lys Asp Asn
 805 810 815

Ile Ser Asp Ile Asn Ile Ile Glu Lys Gln Ser Asn Asp Asp His Asn
 820 825 830

Asn Lys Gln Arg Ile Asp Asn Ser Ser Tyr Tyr Asp Tyr Lys Lys Asn
 835 840 845

Val Lys Leu Ser Asp Asn Ile Ser Asn Asn Ile Asn Asn Asn Ile Pro
 850 855 860

Tyr Gln Asn Asn Asn Asn Asp Met Lys Lys Gly Tyr Thr Asn Val Ser
 865 870 875 880

Asn Asn Ser Phe Asn Asn Ser Asn Ile Tyr Asn Asn Asn Asn Glu His
 885 890 895

Ile Asn Asn Asn Asp Glu Lys Asp Val Ile Ser Glu Gln Ser Glu Lys
 900 905 910

Asn Ile Asn Ile Cys Phe Ile Cys Leu Arg Lys Phe Leu Asn Glu Glu
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Met Leu Gln Arg His Ile Asp Val Ser Asn Leu His Lys Lys Asn Val
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Glu Ile Leu Ser Asp Pro Val Leu Ser Asn
 945 950

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 <213> Plasmodium falciparum
 <400> 9

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Phe Phe His Leu Lys Leu Gly Phe Phe Val Cys Tyr Lys Asn His Asn
 20 25 30

Asp Lys Tyr Ser Phe Lys Asn Lys Ile Leu Gln Lys Asn Asp Thr Ile
 35 40 45

Leu Phe Phe Lys Lys Lys Lys Lys Phe Met Tyr Leu Arg Lys Lys Lys
 50 55 60

Lys Lys Lys Lys Lys Lys Ile Leu Ile Gln Ile Ile Gln Glu Tyr Asn
 65 70 75 80

Lys Tyr Asn Glu Tyr Phe Lys Tyr Asn Ser Asn Leu Glu Gly Asn Gln
 85 90 95

Gly Phe Asn Lys Lys Pro Glu Lys Asn Lys Asn Thr Lys Gly Asn Val
 100 105 110

Tyr Thr Asp His Thr Asn Gln Asn Ala Lys Ser Lys Ile Tyr Asn Tyr
 115 120 125

Asp Met Asn Asp Asp Ser Tyr Ser Asn Tyr Val Asn Asn Asn Asn Val
 130 135 140

Phe Arg Ile Ser Ser Phe Leu Ile Leu Asn Asn Glu Phe Phe Gly Tyr
 145 150 155 160

Pro Leu Gln Phe Val Cys Glu Thr Glu Gly Arg Ser Arg Asn His Glu
 165 170 175

His Tyr Pro Asp Val His Gly Asp Asn Ile Lys Tyr Asn Lys Cys Asp
 180 185 190

Asp Asn Lys Tyr Asn Lys Cys Asp Asp Asn Lys Tyr Asp Lys Cys Asp
 195 200 205

Asp Asn Lys Tyr Asn Lys Cys Asp Asp Asn Lys Tyr Asp Thr Cys Asp
 210 215 220

Asp Asn Lys Tyr Asp Thr Cys Asp Asp Asn Lys Tyr Asp Thr Cys Asp
 225 230 235 240

Asp Asn Lys Tyr Asn Lys Tyr Asp Asp Asp Lys Tyr Asp Thr Cys Asp

	245		250		255												
Asp	Asn	Lys	Tyr	Asn	Lys	Tyr	Asp	Asp	Asp	Lys	Tyr	Asn	Lys	Tyr	Asp		
	260						265					270					
Asp	Asp	Lys	Tyr	Asn	Lys	Tyr	Asp	Asp	Asp	Lys	Tyr	Glu	Lys	Ser	Arg		
	275						280					285					
Lys	Lys	Lys	Lys	Leu	Asn	Asn	Leu	Tyr	Lys	Thr	Ile	Leu	Thr	Lys	Lys		
	290					295					300						
Lys	Arg	Lys	Lys	Met	Asn	Ser	Asn	Leu	Cys	Val	Ile	Asn	Lys	Ile	Tyr		
305					310					315					320		
Lys	Tyr	Pro	Ile	Lys	Tyr	Cys	Glu	Leu	Asn	Ser	Lys	Ala	Phe	Val	Phe		
				325					330					335			
Phe	Ile	Ile	Lys	Asn	Val	Gly	Val	His	Lys	Ile	Thr	Tyr	Tyr	Ser	Tyr		
			340					345					350				
Asn	Lys	Leu	Phe	Ser	Lys	Asp	Gly	Val	Leu	Asn	Gln	Gly	Ile	Gln	Ile		
		355					360					365					
Cys	Lys	Leu	Tyr	His	Val	Asn	Lys	Asn	Lys	Lys	Ile	Lys	Gln	Ile	Ile		
	370					375					380						
Phe	Glu	Ala	Leu	Lys	Asn	Lys	Ile	Thr	Phe	Ser	Tyr	Asp	Asn	Asn	Pro		
385					390					395					400		
Asn	Asn	Ile	Lys	Lys	Lys	Ile	Tyr	Lys	Phe	Leu	Lys	Lys	Asn	Cys	Ala		
			405						410					415			
Tyr	His	Asp	Leu	Ile	Lys	Leu	Phe	Tyr	Phe	Lys	Gly	His	Lys	Gln	Arg		
			420					425					430				
Glu	Lys	Cys	Asn	Lys	Lys	Leu	Asn	Met	Glu	Lys	Thr	Phe	Gly	Val	His		
		435					440					445					
Lys	Ser	Ser	Arg	Tyr	Asn	Tyr	Lys	Thr	Tyr	Lys	Lys	Lys	Lys	Lys	Ile		
	450					455					460						
Asp	Met	Cys	Lys	Asn	Tyr	Cys	Asp	Asp	Ile	Leu	Asp	Thr	Tyr	Asn	Ser		
465					470					475					480		
Lys	Tyr	Tyr	Lys	Gly	Glu	Leu	Ser	Gly	Gln	His	Lys	His	Ile	Lys	Met		

				485						490						495
Thr	Gly	Glu	Gln	Lys	Glu	Glu	His	His	Ile	Lys	Tyr	Thr	His	Leu	Asn	
			500					505					510			
Phe	Asn	His	Gly	Lys	Asp	Glu	Thr	Phe	Tyr	Lys	Glu	Leu	Tyr	Lys	Cys	
		515					520					525				
Asn	Tyr	Ile	Glu	Lys	Tyr	Ile	Ser	Ser	Val	Asn	Tyr	Phe	Leu	Leu	Glu	
	530					535					540					
Arg	Arg	Arg	Met	Phe	Asn	Lys	Tyr	Lys	Gln	Gln	Glu	Leu	Cys	Val	Asn	
545					550					555					560	
Lys	Asn	Glu	Glu	Asn	Asn	Lys	Asn	Lys	Asn	Asp	Asp	Asp	Asn	Lys	Asn	
				565					570					575		
Asp	Asp	Asp	Asn	Lys	Asn	Asp	Asp	Asp	Asn	Asn	Lys	Asn	Asp	Asp	Asp	
			580					585					590			
Asn	Lys	Asn	Asp	Asp	Asp	Asp	Asn	Lys	Asn	Asp	Asp	Asp	Asn	Lys	Asn	
		595					600					605				
Asp	Asp	Asp	Asp	Asn	Lys	Asn	Asp	Asp	Asp	Asp	Asn	Asn	Lys	Asn	Asn	
	610					615					620					
Ile	Gln	Cys	Asp	Asn	His	Ser	Asp	Asn	Ile	Tyr	Met	Cys	Gly	Thr	Tyr	
625					630					635					640	
Gly	Asn	Met	Glu	Asn	Tyr	Asn	Val	Pro	His	Ser	Thr	Asn	Asn	Thr	Asn	
				645					650					655		
Leu	Gln	Ser	Ile	Lys	Lys	Arg	Ile	Ile	Asn	Met	Asn	Ile	Leu	Asp	Asn	
			660					665					670			
Ile	Arg	Cys	Asn	Lys	Thr	Tyr	Lys	Tyr	Ile	Asp	Lys	Asn	Lys	Phe	Lys	
		675					680					685				
Cys	Phe	Thr	Tyr	Tyr	Ser	Cys	Lys	Asn	Tyr	Asn	Val	Cys	Lys	Lys	Ile	
	690					695					700					
Ile	Glu	Lys	Tyr	Lys	Leu	Tyr	Lys	Phe	Leu	Lys	Lys	Lys	Lys	Ile	Glu	
705					710					715					720	
Gly	Tyr	Met	Ile	Leu	Asn	Phe	Leu	Asn	Phe	Asn	Lys	Glu	Leu	Ile	Tyr	
			725						730					735		

Tyr Asn Glu His Lys Lys Asp Met Ser Thr Leu His Asp Asn Leu Phe
 740 745 750

Asp Val Ile Ser Asn Asn Gln Asn Glu Asn Val Lys Tyr Asn His Ile
 755 760 765

Cys Asn Asn Asn Lys Tyr Asp Trp Phe Phe Asn Ser Phe Asp Tyr Val
 770 775 780

Gly Asn Leu Glu Glu Ser Ile Thr Cys Phe Asn Asn His Lys Lys Lys
 785 790 795 800

Glu Asn Met Lys Asn Ile Lys Asn Ile Lys Lys Lys Lys Lys Lys Asn
 805 810 815

Leu Phe Tyr Asn Glu Gln His Asn Ile Lys Asn Asn Lys Asn Asp Tyr
 820 825 830

His Phe Asp Lys Tyr Pro Ser Ser Leu Tyr Ser His Leu Thr Asn Lys
 835 840 845

Lys Met Val Asn Asn Thr Glu Val Asn Asn Ile Lys Asp Glu Asn Ser
 850 855 860

Leu Gln Met Tyr Ile Ile Asn Lys Asp Val Thr Lys Asn Lys Asp Gly
 865 870 875 880

Asn Leu Leu Leu Asn Ser Tyr Tyr Asn Ser Lys Leu Gly Lys Ser Ile
 885 890 895

Asn Thr Cys Ser Lys Glu Ile Tyr Lys Glu Glu His Lys Asn Val Tyr
 900 905 910

Ile Tyr Asn Lys Lys Ile Thr Lys Met Asn Ile Lys Met Lys Thr Glu
 915 920 925

Gln Lys Tyr Ile Cys Val Asp Ser Lys Arg Asn Thr Arg Thr Tyr Asn
 930 935 940

Ser Lys Asn Ile Arg Thr Tyr Asn Ser Lys Asn Ile Arg Thr Tyr Asn
 945 950 955 960

Ser Lys Asn Ile Arg Thr Tyr Asn Arg Lys Asn Ile Arg Thr Tyr Asn
 965 970 975

Arg Lys Asn Ile Arg Thr Tyr Asn Arg Lys Asn Ile Arg Thr Tyr Asn
 980 985 990

Arg Lys Asn Ile Arg Cys Asn Asn Arg Lys Lys Phe His Leu Asn Arg
 995 1000 1005

Asn Lys Lys Lys Asn Gly Cys Val Lys Lys Tyr Lys Leu Tyr Asp
 1010 1015 1020

Glu Arg Asn Thr Leu Val Tyr Lys Asn Lys Ile Gly Ser Asn His
 1025 1030 1035

Phe Phe Leu Lys Glu Glu Ile Gly Lys Ser Thr Lys Lys Leu Asn
 1040 1045 1050

Asp Ile Phe Glu His Ile Ser Asn Tyr Thr Asn Arg Ile Ser Lys
 1055 1060 1065

Asn Ile Asn Ile Thr Asn Lys Asn Arg Tyr Asp Asp Tyr Pro Phe
 1070 1075 1080

Asp Phe Leu Ser Lys Asp Lys Ile Glu Tyr Ile Ser Met Leu Ser
 1085 1090 1095

Pro Thr Ile Asn Glu Ile Lys Thr Leu Asn Thr Ile Leu Thr Ile
 1100 1105 1110

Pro Leu Ile Lys Met Asn Glu Tyr Glu Lys Asn Cys Ile Trp Arg
 1115 1120 1125

Phe Arg Phe Gln Leu Leu Asn Arg Lys Glu Thr Leu Gly Lys Phe
 1130 1135 1140

Leu Lys Ser Ile Asn Trp Asn Asn Lys Glu Glu Glu Glu Glu Ala
 1145 1150 1155

Ile Ile Leu Leu Asn Lys Trp Ala Lys Pro Gly Ile Glu Asn Cys
 1160 1165 1170

Ile Glu Leu Phe Tyr Ser His Leu His His Tyr Val Ile Lys Lys
 1175 1180 1185

Tyr Ile Ile Asp Ile Ile Lys Asn Ser Lys Lys Glu Glu Ile Lys
 1190 1195 1200

Leu Tyr 1205	Leu Phe Gln Leu Val 1210	Gln Ser Leu Arg Thr 1215	Phe Asn Tyr
Gln His 1220	Ile Asp Asn Leu Phe 1225	Ile Asn Thr Leu Ile 1230	Gln Lys Cys
Ile Lys 1235	Ser Lys Lys Leu Ser 1240	Ile Tyr Phe Tyr Trp 1245	Phe Leu Leu
Ser Glu 1250	Ala Lys Asp Lys Ile 1255	Lys Gly Lys Leu Tyr 1260	Leu His Ile
His Lys 1265	Leu Phe Ile Asn Lys 1270	Leu Met Thr Ser Asn 1275	Ile Arg Lys
Asn Lys 1280	Ile Ile Leu Asp Ile 1285	Leu Lys Asn Gln Asn 1290	Arg Phe Arg
Asn Gln 1295	Leu Leu Tyr Leu Thr 1300	Lys Ile Ala Lys Asn 1305	Lys Thr Asp
Arg Ile 1310	Gln Asn Lys Thr Arg 1315	Lys Leu Arg Asn Phe 1320	Leu Phe Tyr
Tyr Arg 1325	Thr Asn Tyr Gly Tyr 1330	Ile Asn Ile Lys Asp 1335	Phe Ile Lys
Asn Asn 1340	Ile Phe Ile Ser Asp 1345	His Asn Val Tyr Asp 1350	Phe Leu Asp
Ile Cys 1355	Lys Met Lys Arg Glu 1360	Asn Ser Leu Asp Thr 1365	Pro Met Arg
Gly Asp 1370	Asn Ile Gly Gln Pro 1375	Ser Tyr Leu Gly Met 1380	Val Pro Gly
Met Gly 1385	Lys Ser Thr Asp Asp 1390	Ser Lys Asn Val Tyr 1395	Gly Asp Asp
Asn Lys 1400	Asn Val Tyr Gly Asp 1405	Asp Asn Lys Asn Val 1410	Tyr Gly Asp
Asp Ser 1415	Lys Asn Ile Tyr Cys 1420	Asp Asp Asn Lys Asn 1425	Val Tyr Gly

Asp	Asp	Asn	Lys	Asn	Ile	Tyr	Gly	Asp	Asp	Ser	Lys	Asn	Ile	Tyr
1430						1435					1440			
Gly	Asp	Asp	Asn	Lys	Asn	Ile	Phe	Ser	Asp	Asp	Asn	Lys	Asn	Leu
1445						1450					1455			
Tyr	Ser	Asp	Asn	Asn	Asn	Asn	Lys	His	Ile	Arg	Tyr	Asn	Lys	Tyr
1460						1465					1470			
Val	Lys	Asn	Ile	Ser	Tyr	Glu	His	Phe	Asn	Glu	Tyr	Pro	Tyr	Asp
1475						1480					1485			
Asn	Lys	Lys	Ser	Arg	Asn	Ile	Tyr	Thr	Cys	Asn	Lys	Asp	Ile	Cys
1490						1495					1500			
Asn	Ser	Ile	Tyr	Tyr	Leu	Asp	Asn	Glu	Leu	Thr	Ile	Asn	Tyr	Asp
1505						1510					1515			
Ile	Lys	Asp	Asp	Leu	Tyr	Phe	Phe	Gln	Tyr	Lys	Arg	Ser	Ser	Asp
1520						1525					1530			
Glu	Lys	Leu	Leu	Asn	Thr	Asp	Leu	Ser	Asn	Asp	Ser	Asn	Asp	Met
1535						1540					1545			
Ile	His	Tyr	Ile	Asp	Asp	Ser	Lys	Asn	Val	Lys	Ile	Glu	Arg	Asn
1550						1555					1560			
Arg	Asp	Asn	Ser	Phe	Phe	Ser	Asn	Phe	Leu	Gln	Phe	Asn	Asp	Asn
1565						1570					1575			
Leu	Asp	Phe	Phe	Leu	Asn	Ala	Thr	Tyr	Ser	Asp	Glu	Asp	Asn	Asn
1580						1585					1590			
Tyr	Glu	Ile	Leu	Asp	Asp	Ser	Ile	Asn	Phe	Val	Gln	Lys	Gln	Lys
1595						1600					1605			
Ile	Lys	Lys	Ile	Lys	Thr	Pro	Leu	Ile	Leu	Pro	Ile	Asp	Pro	Asn
1610						1615					1620			
Ile	Glu	Leu	Leu	Ser	Phe	Leu	Pro	Glu	Gln	Ser	Tyr	Val	Leu	Arg
1625						1630					1635			
Ser	Ser	Leu	Tyr	Pro	Ile	Val	Ile	Ala	Cys	Leu	Val	Arg	Lys	Lys
1640						1645					1650			

Ile Lys Leu Tyr Asn Glu Asn Tyr Asn Asn Leu Ile Ile Asn Asn
1655 1660 1665

His Thr Phe Tyr Lys Asn Asp Gln Asn Lys Asp Asn Ile Ile Asn
1670 1675 1680

Asn Leu Ser Tyr Asp Lys Ser Tyr His Ser Tyr Tyr Asn Ser Gln
1685 1690 1695

Phe Ile Lys Thr Leu Gln Asn Ser Phe Glu Ser Thr Thr Ser Leu
1700 1705 1710

Asn Tyr His Tyr Asn Phe Leu Lys Cys Ser Asn Asn Asn Ile Phe
1715 1720 1725

Tyr Lys Asn Lys Lys Ile Glu Arg Ile Lys Pro Asn Thr Ser Ile
1730 1735 1740

Gln Lys Ala Phe Pro Ser Asn Glu Asn Ile Leu Asn Arg Asn Gln
1745 1750 1755

His Val Tyr Tyr Ser Asn Asn Gln Ile Val His Asn Ile Lys Lys
1760 1765 1770

Met Asn Lys His Lys Arg Asp Asp Tyr Met Ile Asn Glu Lys Val
1775 1780 1785

Leu Pro Cys Val Ser Asn Ser Cys Leu Gly Asp Lys Leu Met Pro
1790 1795 1800

Ser His Asp Lys Met Arg Ser Ser His Asp Lys Met Met Pro Ser
1805 1810 1815

His Asp Lys Met Met Pro Ser His Asp Lys Leu Met Ser Pro His
1820 1825 1830

Tyr Thr Leu Met Ser Ser His Asp Lys Pro Val Ala Pro Ser Gly
1835 1840 1845

Val Ser Ser Leu Gly Glu Lys Lys Ser Lys Asp Glu Lys Lys Asn
1850 1855 1860

Arg Lys Lys Tyr Asn Glu Ile Tyr Gln Leu Ser Ile Lys Lys Tyr
1865 1870 1875

Ile Tyr Lys Ala Gly Asp Asp Leu Arg Gln Asp His Leu Val Ile

1880		1885		1890
Gln Ile Ile Tyr Val Met Asp Asn Ile Trp Lys Arg Tyr Gly Leu				
1895		1900		1905
Asp Leu Lys Met Thr Leu Tyr Arg Val Leu Ala Leu Ser Thr Asp				
1910		1915		1920
Asp Gly Phe Ile Glu Phe Val Asp Tyr Ala Glu Ser Ile Ser Ser				
1925		1930		1935
Ile Lys Lys Asn Tyr Lys Gly Glu Ile Arg Gln Tyr Phe Ile Asp				
1940		1945		1950
Asn Ser Thr Cys Ser Ser Ser Pro Leu Gly Phe Asp Thr Glu Ile				
1955		1960		1965
Leu Gln Asn Phe Ile Ser Ser Cys Ala Gly Tyr Ser Val Ile Thr				
1970		1975		1980
Tyr Ile Leu Gly Ile Gly Asp Arg His Leu Asp Asn Leu Met Val				
1985		1990		1995
Thr Lys Asp Gly Arg Phe Phe His Ile Asp Phe Gly Tyr Ile Phe				
2000		2005		2010
Gly Glu Asp Pro Lys Pro Phe Ser Pro Pro Met Lys Leu Cys Lys				
2015		2020		2025
Glu Met Ile Glu Ala Met Gly Gly Ala His Ser Ile Gly Tyr Glu				
2030		2035		2040
Gln Phe Leu Lys Lys Cys Cys Leu Ala Tyr Lys Tyr Leu Arg Tyr				
2045		2050		2055
His Ser Gln Leu Ile Ile Ser Leu Leu Asp Ala Met Cys Asp Ala				
2060		2065		2070
Gly Leu Lys Asp Met Lys Met Ser Pro Glu Leu Cys Val Leu Lys				
2075		2080		2085
Val Gln Glu Lys Phe Arg Leu Asp Leu Asn Asp Glu Ala Ala Glu				
2090		2095		2100
Ile Tyr Phe Leu Ser Val Ile Asn Ala Ser Val Lys Thr Leu Phe				
2105		2110		2115

Pro Val Val Val Asp Lys Leu His Glu Trp Ala Leu Asn Trp Lys
 2120 2125 2130

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 <211> 3029
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 <213> Plasmodium falciparum

<400> 10

Met Ser Asp Arg Lys Glu Asp Lys Asn Asp Ile Ile Leu Asn Lys Asn
 1 5 10 15

Glu Glu Glu Asp Asn Ile Asn Asn Asn Asn Ile Ile Leu Tyr Lys Ser
 20 25 30

Phe Asp Asp Phe Lys Ile Asn Tyr Ser Tyr Lys Thr Lys Asn His Leu
 35 40 45

His Glu Asn Asp Lys Ile Lys Glu Glu Asp Asp His Glu Ile Lys Arg
 50 55 60

Lys Leu Ile Lys Leu Ile Asn Thr Asn Phe Tyr Ile Asp Lys Cys Ile
 65 70 75 80

His Phe Lys Lys Phe Ser Lys Asp Glu Leu Tyr Lys Thr Phe Ile Tyr
 85 90 95

Ser Asn Phe Leu Thr Lys Ala Leu Ile Leu Tyr Pro Ser Leu Met Pro
 100 105 110

Tyr Val Glu Cys Ile Ile Glu Lys Ile Lys Lys Ile Lys Asn Glu Asn
 115 120 125

Ile Thr Phe Phe Pro Ala Ile Glu Gln Phe Asn Phe Ser Ile Glu His
 130 135 140

Ala Val Ser Ser Tyr Gln Thr Gly Thr Gln Thr Phe Asn Asn His Pro
 145 150 155 160

Asn Phe Tyr Thr Asn Tyr Tyr Gln Ser Phe Ile Lys Asn Asp Asn Ile
 165 170 175

Pro Tyr Ile Asn Gln Thr Asn Ile Phe Asp Asn Asn Ile Lys Asn Lys
 180 185 190

Tyr Met Leu Asp Asp Lys Phe Gly Ser Thr Ser Leu Tyr Asn Asn Asn
 195 200 205

Asn Asn Asn Asn Asn Asn Asn Glu Asn Asn Asn Asp Lys Tyr Leu Asn
 210 215 220

Thr Tyr Tyr Ala Ser Pro Arg Gly Asn Gln Ile Tyr Asn Leu Phe Gln
 225 230 235 240

Asp Ile Asn Asn Asn His His Asn Asn Asn Ile Asn Ser Tyr Ser Ile
 245 250 255

His Ser Gly Met Thr Leu Tyr Asn Ile His Arg Cys Ile Cys Ile Cys
 260 265 270

Leu Gly Val Lys Lys Glu Asp Thr Asp Asn Tyr Leu His Val Phe Ile
 275 280 285

Leu Asn Asn Gly Asn Ile Tyr Gly Ser Gly Lys Lys Cys Ser Val Ser
 290 295 300

Ile Ile Arg Lys Ile Gln Ile Asn Thr Asp Arg His Ile Thr Phe Lys
 305 310 315 320

His Ile Ile Lys Thr Pro Leu Tyr Leu Tyr Lys Ser Lys Glu Asp Lys
 325 330 335

Asn Lys Asn Asn Ser Asn Asn Asn Asn Asn Asn Asn Asn Ser Asn Asn
 340 345 350

Asn Asn Asn Ser Asn Asn Asn Asn Asn Ser Asn Ser Asn Ser Asn Ser
 355 360 365

Asn Asn Asn Thr Asn Ser Asn Ser Asn Ser Asn Ser Asn Ser Asn Asn
 370 375 380

Asn Thr Asn Ser Asn Asn Asn Ser Asn Ser Asn Ser Asn Asn Asn Asn
 385 390 395 400

Ser Asn Asn Asn Thr Thr Thr Asn Asn Ser Ser Ser Ser Asn Asn Ser
 405 410 415

Asn Asn Asn Asn Tyr Tyr His Asn Asn Tyr Lys Asn Glu Lys Glu Leu
 420 425 430

Asn Asn Ser Ser Ser Leu Glu His Ser Ser Ile Ile Met Asn Asn Asp

435	440	445
Asn Ile His Asn Asn Ile Asn Asn Asn His Ile Asn Asn Ile Thr Asp 450	455	460
Leu Asn Asn Met Asn Val Asn Gln Ser Asn Met Lys Glu Asn Asn Asn 465	470	475
Ile Ile Asp Tyr Met Asn Asn Asn Asn Asn Asn Asp Asn Tyr Ser Asn 485	490	495
Asn His Leu Asn Asn Cys Ile Asn Lys Leu Tyr Thr Asn Asn Ile Tyr 500	505	510
Phe Thr Glu Asp Ser Gln Lys Arg Asn Pro Leu Gln Thr Tyr Asn Thr 515	520	525
Ser Lys Asn Thr Asn Asn Phe Leu Asn Val Asn Asn Phe Thr Ser Ser 530	535	540
Tyr Asn Phe Pro Asn Ile Asn Asn Met Asp Ser Asn Ile Tyr Asn His 545	550	555
Thr Thr Cys Asn Asn Phe Asn Lys Asn Ile Asn Asn Asn Ile Asn Asp 565	570	575
Ile Ser Ile Asn Lys His Asn Asn Ile Phe Asn Asn Met Asn His Leu 580	585	590
Asn His Leu Asp Asn His Ser Tyr Ile Gln Asn Asn Leu Tyr Lys Asn 595	600	605
His Met Asn Val Asn Thr Asn Ile Leu Tyr Asn Asn Pro Ile Met Asn 610	615	620
Asn Ile Asn Asn Asp Gln Ile Asn Asn Leu Ser Ile Pro Asn Asn Lys 625	630	635
Asn Glu Asp Asn Asn Glu Ile Asn His Asp Asp Ser Asn Asp Asp Asp 645	650	655
Ser Asn Ser Ser His Ile Thr Leu Asn Lys Ser Asp Lys Asn Lys Asn 660	665	670
Tyr Phe Ala Leu Asn Pro Lys Tyr Gln Asn His Gln Asn His Asn Ile 675	680	685

Asn Asn Asn Ile Gln Asn Asn Leu Asn Glu Gln Ile Lys Glu Lys Asn
 690 695 700

Asp Gln Gln Asn His Asn Ile Lys Glu Ile Lys Asn Lys Glu Leu Leu
 705 710 715 720

Asn Asp Thr Ile Ser Ser Ile Glu Asp Thr Asn Asp Asn Ser Tyr Ser
 725 730 735

Lys Tyr Ile Thr Ser Ser Asp Ile Ser Gln Asn Asn Thr Leu Asn Ser
 740 745 750

Phe Gln His Asn Lys Glu Ile Ser Val Asn Phe Met Tyr Asn Asn Ile
 755 760 765

Ile Leu Asp Asn Asn Asn Asn Ile Asn Asp Asp Asn Asn Asn Asn Asn
 770 775 780

Asn Tyr Phe Cys Ile Pro Cys Gly Tyr Asn Thr Lys Glu Tyr Lys Tyr
 785 790 795 800

Asn Ile Tyr Asn Thr Tyr Asn Tyr Pro Asn Asn Ala Asn His Ile Tyr
 805 810 815

Asn Asn Met Asn Ile Ser Tyr Asn Asn Ser Ala Tyr Asn Asn Asn Tyr
 820 825 830

Val Thr Tyr Asn Asn Phe His Asn Ser Tyr His Asn Asn Tyr Ile Leu
 835 840 845

His Asn Asn Phe His Asn Pro Tyr Asn Ile Tyr Asp Asn Ile Gln Asn
 850 855 860

Thr Glu Gln Lys Lys Leu Tyr Asn Ile Tyr Gln Asn Asp Glu Arg Gln
 865 870 875 880

Asn Asn Ser Phe Asn His Ile Asn Thr Asp Pro His Lys Val Val Asn
 885 890 895

Ser Asn Asn Phe Leu Pro Ile Asn Thr Phe His Tyr Asn Asn Asn Leu
 900 905 910

Asn His Asn Ile Leu Thr Glu Ser Asn Asn Leu Asn Arg Lys Asn Glu
 915 920 925

Asn Asp Asn Ile Pro Ser Ser Tyr Ser Gln Ile His Asn His Gln Ile
 930 935 940

Cys Lys Lys Val Glu Glu Tyr Thr Tyr Asn Ser Ile Asn Gln Asn Thr
 945 950 955 960

Asn Asn Phe Asn Asn Asn Val Met Met Leu Met Asn Thr Ser Asn Asn
 965 970 975

Ile Pro Leu Asp Asn Asn Thr Tyr Asn Ser Asn Lys Asn Lys Ile Ile
 980 985 990

Tyr Lys His Ile Ile Asn Asp His Ile Asn Gln Lys Asp Asn Asn Val
 995 1000 1005

Glu Tyr Glu Asn Leu Asn Asn Ser Cys Asp Asn Thr Gln Asn Lys
 1010 1015 1020

Glu Thr Phe Cys Asn Gln Asp Leu Ile Asn Ser Ser Asn Ile Asn
 1025 1030 1035

Asn Asn Ile Ser Ser Tyr Thr Phe Gln Asn Asn Asn Asp Phe Tyr
 1040 1045 1050

Thr Lys Lys Lys Ser Met Gln Tyr Asn His Asp Asn Ile Tyr Lys
 1055 1060 1065

Ile Asn Thr Thr Ser Glu Asn Val Gly Ser Pro His Thr Asn Asn
 1070 1075 1080

Lys Thr Ser Ile Tyr Asn His Lys Lys Gly Gly Tyr Glu Gln His
 1085 1090 1095

Thr Glu Gln Asn Asn Glu Gln Asn Asn Glu Gln Asn Ser Glu Gln
 1100 1105 1110

Asn Ile Glu Gln Asn Ile Glu Gln Asn Ile Glu Gln Asn Val Ala
 1115 1120 1125

Gln Asn Val Ala Gln Asn Val Ala Gln Asn Val Glu Gln Asn Val
 1130 1135 1140

Glu Gln Asn Val Ala Gln Asn Val Glu Gln Asn Val Glu Gln Asn
 1145 1150 1155

Val	Glu	Gln	Lys	Ala	Glu	Gln	Asn	Ser	Asn	Asn	Glu	Ser	Ile	Lys
1160						1165					1170			
Thr	Asn	Thr	Val	Glu	Thr	Phe	Lys	Arg	Asn	Lys	Asn	Gln	Ile	Thr
1175						1180					1185			
Asn	Ser	Asn	Asn	Val	Ile	Ser	Lys	Gln	Gln	His	Asp	Thr	Asn	Asn
1190						1195					1200			
Ile	Leu	Asn	Asn	Ile	Asn	Ile	Asn	Ile	Lys	Glu	Asn	Ile	Asn	Arg
1205						1210					1215			
His	Lys	Ile	Asn	Glu	Phe	Gln	Trp	Glu	Lys	Ser	Asn	Lys	Ile	Asp
1220						1225					1230			
Ile	Glu	Lys	Asn	Asn	Cys	Leu	Thr	Thr	Lys	Tyr	Asp	Lys	Asp	Asn
1235						1240					1245			
Asp	Asn	Glu	Asn	Asp	Asn	Glu	Asn	Asp	Asn	Thr	Tyr	Asn	Lys	Asn
1250						1255					1260			
Asn	Asp	Ile	Val	Ile	Cys	Asn	Asn	His	Asn	Asn	Ser	Ser	His	Val
1265						1270					1275			
Gln	Lys	Asn	Tyr	Tyr	Asn	Met	Asn	Glu	Ser	Met	Ile	Asn	Glu	Asn
1280						1285					1290			
Asn	Ile	Ile	Ile	Thr	Glu	Gly	Glu	Asn	Leu	Met	Asn	Ser	Thr	Glu
1295						1300					1305			
Glu	Tyr	Phe	Thr	Asn	Glu	Leu	Ile	Lys	Lys	Asp	Ser	Leu	Glu	Lys
1310						1315					1320			
Asn	Lys	Ser	Asp	Thr	Lys	Phe	Leu	Ile	Lys	Leu	Asn	Asn	Glu	Ile
1325						1330					1335			
Lys	Lys	Glu	Glu	Glu	Lys	Lys	Asp	Asn	Ile	Asn	Ile	Phe	Ile	Asn
1340						1345					1350			
Asn	Asn	Ile	Tyr	Glu	Leu	Lys	Glu	Ile	Asn	Gly	Asn	Lys	Asn	Arg
1355						1360					1365			
Ser	Asp	Tyr	Phe	His	Asn	Thr	Lys	Asp	Asp	Lys	Glu	Asn	Ile	Thr
1370						1375					1380			
Asn	Val	Ser	Ser	Asn	Asn	His	Leu	Ser	Val	Pro	Leu	Asn	Lys	Tyr

1385		1390		1395
Asn Asp Glu Asp Lys Gln Leu Ile Lys Gln Met Asn His Ala Ser				
1400		1405		1410
Asn Met Asn Phe Ile Tyr Asp Tyr Asn Tyr His Asn Asn Tyr Ser				
1415		1420		1425
Ser Thr Asn Ser Gln Gln Leu Ile Lys Asn Asn Thr Glu Asn Leu				
1430		1435		1440
His Ser Phe Lys Asn Glu Thr His Ser Thr Tyr Val Lys Tyr Ile				
1445		1450		1455
Lys Ser Glu Ile Asn Asn Met Asn Asn Ser Ile Gly Val Pro Thr				
1460		1465		1470
Lys Lys Asn Asp Tyr Met Tyr Thr Asn Tyr Leu Asn Met Glu His				
1475		1480		1485
Ile Lys Met Asn Asn Met Glu Lys Glu Ile Ile Lys Lys Gly Asn				
1490		1495		1500
Asp Asn Glu Ile Lys Gly Gln Arg Ile Gln Val Glu His Asp Arg				
1505		1510		1515
Asp Val His Tyr Asn Thr Thr Gln Glu Asn Asn Ile Ile Asn Asn				
1520		1525		1530
Gln Asn Pro Gln Thr Asn His Asp Gly Asp Met Asn Ile Asn Ile				
1535		1540		1545
Asn Ser Asn Lys Phe Met Thr Pro Thr Thr Leu Lys Glu Lys Tyr				
1550		1555		1560
Gln Asn Asn Ile Asn Thr Asn Glu Gln His Asn Lys Asn Glu Glu				
1565		1570		1575
Asn Lys Asn Lys Asn Val Ile Asn Asn Thr Ser Gln Met Ile Asn				
1580		1585		1590
Asp Asn Asn Val Ile Gln Asn Asp Ile Asn Asn Met Asn Asn Asn				
1595		1600		1605
Glu Asn Glu Asn Glu Asn Glu Asn Leu Tyr Ile Asn Val His Thr				
1610		1615		1620

Gln Tyr	Lys Ser Asp Asn Ile	Leu Ser Cys Glu Lys	Asn Phe Ile
1625	1630	1635	
Thr Leu	Lys Asn Asn Asn His	Asn Asn His Asn Asn	Asn Asn Asn
1640	1645	1650	
Tyr Tyr	Tyr Tyr Tyr Ile Asn	Asn Asp Asn Ile His	Leu Asn Asn
1655	1660	1665	
Ser His	Ile Asp Ile Met Lys	Thr Asn Asn Ile Asn	Lys Asp Met
1670	1675	1680	
Thr Thr	Asn Ser Thr Pro His	Phe Lys His Asn Ile	Ile Ser Asn
1685	1690	1695	
Asp Cys	Ser Pro Asn Asn Ile	Asn Gln Asn Ile Phe	Val Asp Pro
1700	1705	1710	
Asn Lys	Tyr Ile Tyr Asn Asn	Ile His Thr Asn Tyr	Asn Ala Tyr
1715	1720	1725	
His Glu	Glu Ser Leu Gln Val	Val Gly Asn His Asn	Ser Ser Ser
1730	1735	1740	
Leu Leu	Arg Asn Ile Asn Glu	Ser Phe Ser Asn Gln	Tyr Asp Asn
1745	1750	1755	
Lys Lys	Asn Leu Glu Ala His	His Ile Asp Asp Asp	Lys Asn Lys
1760	1765	1770	
Glu Ala	Phe His Asn Asp Asp	Asp Lys Asn Lys Glu	Ala Phe His
1775	1780	1785	
Asn Val	Asp Asp Lys Asn Lys	Glu Thr Phe His Asn	Asp Asp Asp
1790	1795	1800	
Lys Asn	Lys Glu Ala Leu His	Asn Asp Asp Asp Lys	Asn Lys Glu
1805	1810	1815	
Ala Leu	His Asn Asp Asp Asp	Lys Asn Val Glu Ala	Tyr His Asn
1820	1825	1830	
Asp Asn	Tyr Asn Asp Asn Tyr	Asn Asn Asn Tyr Tyr	Phe Asp Gly
1835	1840	1845	

Asn Asn Asn Met Gln Asp Glu Ser Phe Tyr Ser Asn Asn Ser His
1850 1855 1860

Ala Glu Tyr Asn Gln Ser Asn Ile Glu Tyr Ile Ser Asn Tyr Asp
1865 1870 1875

Lys Asn Tyr Ser His Ile Gln Gln Tyr Thr Asn Gly Phe Cys Tyr
1880 1885 1890

Thr Asn Asn Asn Gln Tyr Ile Asn Asn Thr Glu Leu Thr Asn Asn
1895 1900 1905

Ser Ser Tyr Ile Tyr Asn Asn Ser Tyr Met Asn Asn Asn Thr Tyr
1910 1915 1920

Ser Phe Asn Lys Glu Tyr Ser Asp Asn Asn Met Cys His His Lys
1925 1930 1935

Asn Asp Asn Ile His Met Ile Asn Asp Val Ala Thr Lys Leu Asn
1940 1945 1950

Gln His Pro Met Asn Met Tyr Asn Ser Asn Asn Asn Asn Ile Ile
1955 1960 1965

Tyr Asn Asn Asn Asn Asn Gln Ile Tyr Asp Asn Asn Ile Asn Asn
1970 1975 1980

Met Tyr Asn Asp Tyr Tyr Asn Tyr Asn Asn Asn Asn Met Tyr Asn
1985 1990 1995

Asn Tyr Tyr Asn Tyr Asn Asn Asn Asn Asn Met Tyr Asn Asn Tyr
2000 2005 2010

Tyr Asn Tyr Ser Asn Lys Asn Phe Tyr Met Asn Glu Lys Tyr Thr
2015 2020 2025

Glu Gly Ala Thr Asn Phe Met Asn Ile Asp Asp Met Lys Asp Ala
2030 2035 2040

Gly Asn Glu Asn Asn Met His Ile Leu Asn Asn Asn Ser Ile Asn
2045 2050 2055

Gln Thr Tyr Tyr His Ser Lys Ile Lys Asn Asn Asn Asn Asn Asp
2060 2065 2070

Asp	Asp	Asp	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asp	Asn
2075						2080						2085		
Asn	Asp	Asn	Asn	Asn	Ile	Met	Met	His	Asn	Asn	Tyr	Gln	Pro	Phe
2090						2095					2100			
Leu	Tyr	Glu	Asn	Gln	Tyr	Asn	Lys	His	Ile	His	Met	Met	Asn	Gln
2105						2110					2115			
Gln	Ile	Gln	Lys	Glu	Thr	Asn	Thr	Ser	Phe	Lys	His	Ile	Thr	Cys
2120						2125					2130			
Asn	Gln	Lys	Phe	Ile	Glu	Asn	Asn	Lys	Ile	Asn	Ile	Ser	Asn	Asp
2135						2140					2145			
Gln	Asn	Val	Thr	Asn	Met	Pro	Ile	Leu	Tyr	Ser	Met	Asn	Lys	Glu
2150						2155					2160			
Gln	Tyr	Ile	Asn	Ile	Ser	Asn	His	Asn	Asn	Gly	Cys	Asn	Tyr	Asp
2165						2170					2175			
Asn	Ile	Asn	Ser	Ile	Asn	Val	Tyr	Glu	Asn	Asn	Asn	Glu	Tyr	Ile
2180						2185					2190			
Ala	Pro	Lys	Asn	Met	Leu	Tyr	Lys	Ser	Glu	Glu	Lys	Glu	Asn	Leu
2195						2200					2205			
Tyr	Asn	Ser	Ser	Ser	Ile	Tyr	Asn	Gln	Asn	Tyr	Glu	Gln	Lys	Tyr
2210						2215					2220			
Ile	Asn	Tyr	Met	Asn	Asn	Ala	Ser	Tyr	Ile	Met	Asn	Asn	Asn	Met
2225						2230					2235			
Asn	Asp	Tyr	Thr	Asn	Asn	Tyr	Asn	Val	Gln	Asn	Phe	Arg	Thr	Phe
2240						2245					2250			
Lys	Asn	Asn	Val	Phe	Gln	Gln	Pro	Leu	Ser	Tyr	Ser	Asn	Gly	Ser
2255						2260					2265			
Glu	Ala	Met	Leu	His	Ala	Ser	Glu	Phe	Asn	Gln	Gly	Ile	Asn	Lys
2270						2275					2280			
Glu	Asn	Phe	Gln	Gly	Glu	Tyr	Val	Ser	Asn	Leu	Val	Asn	Ser	Tyr
2285						2290					2295			

Lys	Asp	Asn	Val	Asn	Asn	Val	Glu	Gly	Val	Leu	Gly	Ile	Lys	Lys
2300						2305					2310			
Asp	Lys	Glu	Asn	Asp	Asn	Asn	Glu	Glu	Glu	Asn	Asp	Glu	Glu	Glu
2315						2320					2325			
Asn	Asp	Glu	Glu	Glu	Asn	Asp	Glu	Glu	Glu	Asn	Asp	Glu	Glu	Glu
2330						2335					2340			
Asn	Asn	Glu	Glu	Glu	Asn	Lys	Glu	Ala	Gln	Asn	Asn	Glu	Glu	Glu
2345						2350					2355			
Asn	Asn	Asn	Gly	Asp	Asn	Asn	Asn	Gly	Asp	Asn	Asn	Asn	Asn	Gly
2360						2365					2370			
Asp	Asn	Asn	Asn	Asn	Gly	Asp	Asn	Asn	Asn	Asn	Gly	Asp	Asn	Asn
2375						2380					2385			
Asn	Asn	Gly	Asp	Asn	Asn	Asn	Asn	Asn	Ile	Phe	Tyr	Asn	Met	Glu
2390						2395					2400			
Gly	Ser	Gln	Lys	Ile	Cys	His	Asp	Asp	Ile	Thr	Leu	Asn	Glu	Cys
2405						2410					2415			
Leu	Asn	Ser	Ile	Asp	Ile	Asn	Glu	Gly	Glu	Lys	Lys	Thr	Phe	Glu
2420						2425					2430			
Glu	Asn	Lys	Ser	Ser	Phe	Ser	Met	Leu	Tyr	Leu	Phe	Gly	Lys	Val
2435						2440					2445			
Lys	Phe	Tyr	Ile	Ser	Ile	Ile	Asp	Ile	Ile	His	Asn	Lys	Thr	Asn
2450						2455					2460			
Ser	His	Asp	Leu	Leu	Trp	Val	Pro	Arg	Cys	Cys	Asn	Gly	Ser	Tyr
2465						2470					2475			
Gly	Thr	Phe	Leu	Lys	Tyr	Asn	Tyr	Ser	Asn	Met	Asn	Glu	Ile	Asn
2480						2485					2490			
Lys	Tyr	Thr	His	Asp	Glu	Gly	Ile	Asp	Ile	Asp	Ser	Ile	Asn	Leu
2495						2500					2505			
Lys	Leu	Met	Glu	Thr	Arg	Phe	Ser	Lys	Asn	Val	Ala	Ser	Ser	Arg
2510						2515					2520			

Thr Thr Lys Arg Lys Arg Met Ile Asp Ile Asp Lys Thr Val Leu
2525 2530 2535

His Tyr Tyr Lys Glu His Ile Ser Glu Phe Phe Asn Asp Lys Asn
2540 2545 2550

Lys Ile Ile Lys Leu Thr Lys Lys Leu Cys Lys Tyr Lys Lys Lys
2555 2560 2565

Arg Lys Phe Asn Asp Thr Gln Lys Lys Gly Thr Tyr Lys Asp Glu
2570 2575 2580

Lys Asp Tyr Asp Asn Tyr Asp Val Leu Pro Asn Gly Asp Glu Gln
2585 2590 2595

Asn His Glu Asn Lys Lys Gln Glu Asp Asn Asn Asn Asn Asn Asp
2600 2605 2610

Asp Asn Asn Asn Lys Asn Lys Asn Asn Asp Asp Asp Asn Asn Asn
2615 2620 2625

Asn Asn Asn Asn Asn Asn Asn Asn Asn Asp Asn Asn Asn Lys Asn
2630 2635 2640

Asn His Asn Asn Asp Asn Asn Asn Asn Asp Asn Asn Asn Lys Asn
2645 2650 2655

Asn His Asn Asn Asn Asn Asn Asp Asn His Lys Asn Asn Ser Asn
2660 2665 2670

Asn Lys Ala Lys Gly Lys Asn Met Gly Lys Gly Lys Lys Gln Thr
2675 2680 2685

Pro Asn Arg Met Asn Asn Thr Lys Asn Val Gln Asn Gly Lys Asn
2690 2695 2700

Thr Lys Asn Ile Asn Asn Ile Lys Asn Ile Ser Asn Met Ser Asn
2705 2710 2715

Ile Glu Ser Ile Asn Ser Met Thr Ser Ile Lys Ser Val Asp Gly
2720 2725 2730

Glu Asn Arg Met Asn Asn Thr Ile Asn Met Asn Gly Met Asn Lys
2735 2740 2745

Thr Glu Ser Ile Asn Asn Ile Glu Ile Thr Gln Asn Met Asn Thr

2750		2755		2760
Ile Asn Ser Ile Asn Asn Ile	Asn Gly Ile Asn Asn	Ile Asn Gly		
2765		2770		2775
Ile Asn Asn Val Asn Gly Ile	Asn His Thr Asn Gly	Ile Asn His		
2780		2785		2790
Thr Asn Gly Ile Asn Asn Ile	Asn Thr Met Asn Asn	Met Asn Asn		
2795		2800		2805
Met Asn Asn Ile Asn His Ile	Asn Asn Ile Asn Asn	Met Asn Asn		
2810		2815		2820
Met Asn Asn Met Asn Arg Ile	Asn Ser Leu Asn Asn	Lys Asn Asn		
2825		2830		2835
Ile Asn Pro Ile Asn Gln Tyr	Asn Asp Glu Lys Gln	Asn Leu Leu		
2840		2845		2850
Asn Ser His Leu Gln Phe Asn	Gln Val Asn Tyr His	Asn Asn Leu		
2855		2860		2865
Val Asn Gly Leu His Lys Asn	Asn Phe Leu Ser Asn	Asn Asn Tyr		
2870		2875		2880
Ile Asn Thr Thr Asp Ile Asn	Gly Asn Asn Met Ile	Ser His Asn		
2885		2890		2895
Asp His Met Asn Asn Lys Leu	Tyr Ser Asn Ile Asn	Asn Asn Tyr		
2900		2905		2910
Tyr Tyr Asn Arg Ala Asn Asn	Glu Ile Pro Asn Asn	Asn Ser Asn		
2915		2920		2925
Asn His Asn Asn Asn Phe Asn	Ile Tyr Glu Ser Lys	Tyr Gln Thr		
2930		2935		2940
Met Ile His Asn Asn Asn Ile	Gly Gln Asp Leu Lys	Gln Gln Ile		
2945		2950		2955
Asn Asn Tyr Asn Glu Asn Thr	Ser Ser Asn Asn Asn	Leu Ser Ile		
2960		2965		2970
Ser Gln Leu Leu Glu Gly Asn	Thr Asn Phe Ile Asn	Ile Ser Asn		
2975		2980		2985

Thr Phe Ile Asn Thr Asn Tyr Ser Asn Asp Phe His Gln Thr Asn
 2990 2995 3000

Asp Leu Leu Val Asn His Asn Asn Ile Asp Leu Lys Tyr Leu Ser
 3005 3010 3015

Asp Asn Ile Asn Thr Asn Thr Tyr Asn Glu Gln
 3020 3025

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 <212> PRT
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 Met Ser Met Phe Leu Asn Ile Leu Ile Leu Ile Asp Ala Ala Ser Val
 1 5 10 15

Ala Phe Leu Leu Ile Thr Phe Leu Met Ile Asn Leu Asn Glu Glu Ser
 20 25 30

Leu Glu Leu Ser Gln Ala His Arg Glu Asn Gly Lys Lys Ala Leu Val
 35 40 45

Val Ala Ile Ile Leu Tyr Val Ile Phe Leu Val Leu Leu Phe Ile Tyr
 50 55 60

Lys Ala Tyr Lys Asn Lys Arg Lys Leu Tyr Thr Asn Phe Phe Met Lys
 65 70 75 80

Lys Arg Asn Ala Pro Lys Tyr Val Gln Leu Ala Ser Thr Tyr Leu Ser
 85 90 95

Ala Ser Asp Glu Tyr Glu Gln Tyr Glu Leu Asn Lys Ile
 100 105

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Glu Ser Asn Glu Arg Tyr Gln Asp Pro Gln Asn Tyr Glu Leu Ser Lys

	20		25		30														
Lys	Ala	Val	Ile	Phe	Thr	Pro	Ile	Tyr	Tyr	Phe	Asp	Gly	Asn	Ser	Trp				
	35						40					45							
Thr	Ala	Leu	Glu	Arg	Leu	Leu	Ser	Leu	Lys	Lys	Thr	Ile	Phe	His	Asp				
	50					55					60								
Asn	Arg	Leu	Val	Thr	Leu	Cys	Pro	Val	Glu	Asn	Asn	Ile	Thr	Pro	Ile				
65					70					75					80				
Glu	Leu	Glu	Ala	Ser	Ile	Ser	Gly	Lys	Tyr	Asp	Ile	Lys	Val	Tyr	Arg				
				85					90					95					
His	Cys	Glu	Tyr	Ile	Leu	Cys	Ile	Glu	Gly	Glu	Gln	Lys	Ile	Leu	Ile				
			100					105					110						
Lys	Ile	Pro	Val	Thr	Lys	Asn	Ile	Ile	Thr	Trp	Asn	Ser	Glu	Gln	Arg				
	115						120					125							
Leu	Pro	Leu	Leu	Pro	Lys	Thr	Trp	Lys	Pro	Thr	Ile	Phe	Leu	Leu	Asn				
	130					135					140								
Glu	Ser	Asn	Ile	Phe	Leu	Arg	Phe	Ile	Pro	Asp	Lys	Cys	Leu	Val	Ile				
145					150					155					160				
Ser	Gln	Val	Ser	Asn	Ser	Asp	Ser	Tyr	Lys	Val	Asn	Cys	Ile	Asn	Phe				
				165					170					175					
Ser	Glu	Gly	Phe	Cys	Cys	Cys	His	Pro	Ile	Asn	Asn	Leu	Ala	Leu	Leu				
			180					185					190						
Tyr	Gly	Glu	Tyr	Gln	Gln	Asn	Gln	Glu	Ser	Lys	Ile	Met	Lys	Leu	Pro				
	195						200					205							
Lys	Leu	Pro	Ile	Ser	Asn	Gly	Lys	Tyr	Asn	Tyr	Phe	Ile	His	Phe	Phe				
	210					215					220								
Thr	Trp	Gly	Thr	Met	Phe	Val	Pro	Lys	Tyr	Phe	Glu	Leu	Ser	Arg	Gly				
225					230					235					240				
Pro	Leu	Cys	Asn	Phe	Lys	Lys	Asn	Ile	Ile	Ala	Leu	Leu	Ile	Ile	Pro				
				245					250					255					
Pro	Lys	Ile	His	Ile	Ser	Ile	Glu	Leu	His	Ser	Ser	Ser	Pro	Val	Val				
			260					265					270						

Cys Ser Met Glu Tyr Lys Lys Asp Phe Leu Ile Thr Ala Arg Lys Pro
275 280 285

Asn Ile Thr Asp Ile Glu Ile Tyr Thr Ile Ile Gln Asp Gln Leu Ile
290 295 300

Lys Tyr Asp Phe Ser Tyr Asp Leu Arg Leu Asn Lys Glu Asn Ala Ser
305 310 315 320

Ile Ser His Leu Asn Ile Pro Ile Gly Phe Lys Ile Cys Asn Glu Glu
325 330 335

Lys Glu Lys Lys Lys Lys Asn Ser Ser His Ile Cys Lys Trp Thr Phe
340 345 350

Ile Glu Thr Lys Asp Gln Arg Thr Leu Asn Arg Ser Gly Asn Ser Ser
355 360 365

Ser Glu His Ile Met Ser Gln Asp Leu Ala Cys Ile Phe Asp Ala Glu
370 375 380

Lys Ala Met Ile Cys Cys Leu Leu Ser Asn Ile
385 390 395

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<213> Plasmodium falciparum

<400> 13

Met His Asp Phe Phe Leu Lys Ser Lys Phe Asn Ile Leu Ser Ser Pro
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Leu Phe Asn Asn Phe Tyr Lys Arg Asn Asn Glu Asp Glu Tyr Phe Lys
20 25 30

Lys Asp Arg Asn Asn Asn Asp Asp Leu Gly Val Met His Asn Tyr Ala
35 40 45

Asp Asp Ser Glu Trp Arg Glu His Asn Lys Lys Asp Arg Met Thr Ser
50 55 60

Leu Lys Asn Glu Leu Asn Glu Gln Leu Ile Tyr Thr Tyr Tyr Asn Asn
65 70 75 80

Phe Asn Asn Asn Tyr Glu Tyr Tyr Asn Lys Ser Thr Glu Lys Leu Lys
85 90 95

Glu Lys Asn Asn Glu Asp Glu Tyr Asn Glu Glu Gln Glu Tyr Glu Pro
100 105 110

Thr Ala Asn Leu Leu Gln Asp Lys Asn Lys Ile Asn Asp Met Asn Asn
115 120 125

Phe Tyr Asn Asn Phe Asn Lys Asn Ser Leu Phe Asn Tyr Gln Asn Phe
130 135 140

Gln Asn Ala Asp Lys Asn Phe Leu Tyr Leu Leu Asn Lys Lys Asn Lys
145 150 155 160

Asn Asn Ser Thr Asn Glu Asn Ile Leu Val Asp Glu Phe Lys Lys Leu
165 170 175

Lys Asn His Val Leu Phe Leu Gln Met Met Asn Val Asn Leu Gln Lys
180 185 190

Gln Leu Leu Thr Asn His Leu Ile Asn Thr Pro Lys Ile Met Pro His
195 200 205

His Ile Ile Ile Asn Asn Lys Thr Glu Val Ser Ser Asn Ala Val Ser
210 215 220

Glu Ile Gln Asn Asn Lys Asp Lys Lys Lys Asn Gly Thr Met Tyr Ile
225 230 235 240

Leu Leu Lys Lys Ile Leu Ser Ser Arg Phe Asn Gln Met Ile Phe Val
245 250 255

Ser Ser Ile Phe Ile Ser Phe Tyr Leu Ile Asn Lys His Trp Gln Arg
260 265 270

Ala Leu Lys Ile Ser Gln Leu Gln Lys Lys Ile Asn Ser Asn Phe Leu
275 280 285

Leu Lys Ser Val Arg Leu Phe Glu Glu Ser Leu Gly Ile Arg Lys Asn
290 295 300

Lys Tyr Ile
305

<211> 1234

<212> PRT

<213> Plasmodium falciparum

<400> 14

Met Lys Lys Lys Lys Lys Lys Lys Lys Lys Met Gly Tyr Ser Gly Ile Asp
1 5 10 15

Ile Lys Glu Ile Asn Val Lys Arg Lys Asn Ser Val Tyr Phe Asp Asn
20 25 30

Val Asp Val Cys Asn Ile Leu Lys Glu Asn Asn Thr Tyr Lys Gln Lys
35 40 45

Lys His Ile Ser Ile Asn Ile Asn Arg Lys Cys Ala Ser Tyr Asn Asn
50 55 60

Ile Tyr Tyr Ile Asn Asn Asp His Pro Gly Leu Gly Lys Asn Ile Ser
65 70 75 80

Tyr Tyr Gln Asn Lys Asp Asn Met Gln Leu Lys His Phe Phe Asn Ser
85 90 95

Asn Lys Ile Asn Ile His Asp Asn Lys Ile Lys Thr Thr Gln Ser Tyr
100 105 110

Ser Tyr Tyr Glu Pro Leu Arg Tyr Pro Ala Phe Lys Met Ser Asp Lys
115 120 125

Ile Lys Ser Glu Thr Asn Glu Leu Lys Lys Met Asp Thr Lys Lys Asp
130 135 140

Val His Met Lys Asp Ile His Pro Lys Asn His Lys Ile Ser Lys Asn
145 150 155 160

Asp Asp Leu Gly Asn Asn Asn Ile Asp Asn Asn Asn Asn Asn Asp Asp
165 170 175

Asn Asn Asn Ser Asn Asn Asn Asn Asn Asn Asn Ile Lys Cys Val Ser
180 185 190

Asn Arg Ser Thr Ser Asn Lys His Ile Asn Arg Arg Asn Met Cys Ile
195 200 205

Phe His Asn Lys Ile Asn Lys Lys Glu Lys Asn Ile Asn Glu Gln Gly
210 215 220

Glu Lys Asn Glu His Ser Lys Ile Asp His Lys His Phe Gly Asn His
 225 230 235 240

Ile Leu Lys Asp Val Lys Asn Lys Lys Lys Ser Asn Asn Ile Ile Pro
 245 250 255

Leu Leu Tyr Glu Glu Asn Lys Asn Asn Ile Asn Ile Asn Ser Lys Asn
 260 265 270

Gly Asn Ser Asn Asn Leu Glu His Glu His Val Gln Glu Lys Pro Ala
 275 280 285

Arg Phe His Lys Lys Lys Arg Lys Lys Lys Lys Gln Asn Lys Leu Ala Gly
 290 295 300

Asn Lys Ile Lys Asn Asn Gly Lys Asn Glu Glu Val Lys Gln Ser Ser
 305 310 315 320

Val Ile Glu Met Glu Lys Val Asn Tyr Leu Asp Asp Lys Val Asn Gly
 325 330 335

Asn Val Glu Glu Lys Lys Lys Lys Lys Lys Lys Asn Lys Asn Lys Asp
 340 345 350

Lys Asp Lys Lys Arg Asp Glu Glu Lys Glu Glu Asp Lys Asn Lys Asp
 355 360 365

Lys Asp Lys Asp Lys Asp Lys Asn Asn Asn Asn Asn Asn Asn Asn Asn
 370 375 380

Asn Asn Asn Asn Lys Asn Asn Asn Lys Asn Lys Asn Lys Lys Lys Lys
 385 390 395 400

Asn Lys Ile Asn Asn Asn Asn Ile Asn Lys Asn Lys Asp Lys Asp Met
 405 410 415

Ser Lys Asn Lys Arg Lys Asn Lys Asn Lys Asn Glu Val Val Glu Asp
 420 425 430

Asn Lys Asn Lys Gln Tyr Leu Glu Lys Lys Glu Asn Asn Ile Asn Glu
 435 440 445

Ile Pro Lys Glu Val Met Tyr Ile Pro Ile Glu Glu Arg Cys Lys Ser
 450 455 460

Ile Val Ser Ser Ser Asp Glu Glu Asn Leu Tyr Tyr Glu Lys Pro Tyr
 465 470 475 480

Glu Glu Val Glu Asn Tyr Phe Glu Phe Ile Glu Asn Lys Asn Leu Ile
 485 490 495

Asn Pro Ser Asp Ile Thr Asn Glu Val Lys Phe Ile Leu His Met Thr
 500 505 510

Leu Leu Thr Leu Tyr Lys Asp Gln Ile Lys Pro Ser Tyr Gly Lys Ile
 515 520 525

Lys Lys Arg Leu Thr Cys Phe Asn Glu Asn Leu Glu Ile Lys Tyr Asn
 530 535 540

Phe Leu Asn Ile Tyr Ala Ser Leu Arg Asn Glu Tyr Ile Val Val Arg
 545 550 555 560

Thr Lys Arg Asn Asn Ile Phe Val Leu Leu Arg Glu Thr Pro Lys Trp
 565 570 575

Phe Leu Gly Trp Val Lys Thr Arg Cys Phe Lys Asn Ser Tyr Pro Lys
 580 585 590

Lys Val Trp Lys Lys Leu Ile Glu Tyr Phe Leu Asn Met Thr Lys Ser
 595 600 605

Asn Met Asn Asn Asn Leu Tyr Val Ser Met Tyr Ile Pro Phe Ile Lys
 610 615 620

Lys Phe Tyr Asp Lys Arg Phe Ile Phe Tyr Leu Asn Glu Lys Asp Asn
 625 630 635 640

Glu Lys Asn Lys Cys Tyr Glu Lys Ile Tyr Asn Phe Ser Phe Leu Ser
 645 650 655

Phe Asp Met Asn Glu Gln Lys Lys Lys Arg Asn Asn Phe Asn Val Leu
 660 665 670

Phe Tyr Ile Tyr Asn Met Tyr His Asn Asn Phe Ser Tyr Phe Ser Gln
 675 680 685

Cys Asn Asp Tyr Tyr Ile Lys Asn Val Glu Lys Asn Phe Leu Leu Tyr
 690 695 700

Tyr Thr Tyr Ile Phe Phe Asn Tyr Asp Lys Asn Asp Leu Asn Asn Asn
 705 710 715 720
 Asn Ser Asn Ile Asp Leu Ser Lys Lys Asn Tyr Leu Cys Glu Asp Lys
 725 730 735
 Asn Lys Asp Thr Thr Thr Thr Ser Asn Asn Asn Asn Asn Asn Asn Asn
 740 745 750
 Asn Asn Asn Asn Asp Asn Asn Asn Asn Asn Asp Asn Asn Asn Asn Ser
 755 760 765
 Ser Ser Cys Ser Asn Asn Asn Asn Ser Ser Ser Ser Ser Ser Ser Tyr
 770 775 780
 Asn Asn Asn Cys Asn Asn Tyr Thr Ser Leu Tyr Val Glu His Leu Phe
 785 790 795 800
 Asn Asp Lys Lys Glu Asn Ile Leu Gln Thr Asp Glu Ile Ile Lys Tyr
 805 810 815
 Asp Ile Thr Lys Asn Leu Ile Asn Glu Glu Asn Asn Ile Asp Thr Thr
 820 825 830
 Asn Met Phe Asp Ile Phe Asn Asn Asp Ile Tyr Glu Val Ala Asp Ile
 835 840 845
 Leu Lys Lys Lys Asn Phe Pro Ile Leu Lys Asp Tyr Ser Leu Gly Lys
 850 855 860
 Ile Ala His Ile Ile Tyr Leu Cys Leu Tyr Asn Gly Leu Leu Leu Glu
 865 870 875 880
 Glu Asn Gln Lys Ile Ile Pro Ala Cys Ser Ser Lys Asn Ile Ile Ser
 885 890 895
 Ser Ile Phe Tyr Ile Lys Asn Lys Asn Ser Tyr Leu Tyr Asp Asn Tyr
 900 905 910
 Ser His Leu Asn Gln Asn Phe Tyr Cys Asp Asp Asn Asn Ile Ser Thr
 915 920 925
 Tyr Gly Tyr Asp Tyr Asn Glu Ser Thr Ser Ile Asn Leu Met Thr Lys
 930 935 940

Glu Tyr Asp Asp Lys Met Asp Ser Phe Leu Asn Val Tyr Glu Asn Phe
 945 950 955 960

Leu Lys Asn Glu Glu Gly Leu Phe Phe Ser Lys Lys Lys Asn Asn Lys
 965 970 975

Cys Asp Val Asn Val Ser Leu Asn Lys Cys Thr Glu Glu Phe His Ile
 980 985 990

Pro Ala Ile Thr Asn Leu Glu Glu Ala Lys Phe Lys Ile Glu Arg Leu
 995 1000 1005

Leu Lys Ser Ser Tyr Lys Lys Cys Ile Tyr Leu Leu Phe Phe Arg
 1010 1015 1020

Glu Lys Phe Leu Lys Lys Tyr Lys Gln Asn Ile Asn Pro Leu Ile
 1025 1030 1035

Phe Gly Tyr Asn Ser Leu Ile Glu Phe Leu Phe Tyr Gly Cys Arg
 1040 1045 1050

Glu Val Cys Lys Ile Tyr Ile Leu Asn Asn Asn Leu Leu Ile Val
 1055 1060 1065

His Leu Ser Tyr Asp Ile Ala Lys His Ile Asn Asn Asn Asn Glu
 1070 1075 1080

Lys Glu Lys Asp Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Asn
 1085 1090 1095

Val Ile Glu Glu Phe Tyr Tyr Ser Asp Tyr Cys Tyr Asn Lys Thr
 1100 1105 1110

Glu Asn Asn Asn Asn Lys Phe Asn Asn Ser Ser Leu Glu Val Cys
 1115 1120 1125

Thr Ile Met Lys Asp Asn Ala Lys Lys Lys Asn Ser Phe Phe Ile
 1130 1135 1140

Thr Tyr Ser Tyr Trp Lys Tyr Met Ser Lys Lys Glu Lys Gln Asn
 1145 1150 1155

Asp Ile Leu Asp Asn Val Ser Phe Leu Lys Gly Glu Gln Asn Tyr
 1160 1165 1170

Ile Phe Ser Asp Asp Ile Trp Lys Ile Asn Lys Cys Ser Phe Asp
 1175 1180 1185

Lys Thr Asn Pro Ile Gln Gln Ser Gly Lys Asp Ile Pro Leu Tyr
 1190 1195 1200

Tyr Lys Asn Met Lys Lys Ile Asn Thr Gly Ile Phe Asn Met Pro
 1205 1210 1215

Asn Leu Val Gln Ile Asn Asn Tyr Asp Phe Glu Phe Phe Ser Thr
 1220 1225 1230

Cys

<210> 15
 <211> 100
 <212> PRT
 <213> Plasmodium falciparum

<400> 15

Met Tyr Asp Ala Asp Lys Cys Glu Ala Ile Leu Val Leu Asp Ile Pro
 1 5 10 15

Gly Phe Lys Ile Glu Asp Ile Asp Val Glu Ile Gly Glu Gly Met Leu
 20 25 30

Thr Val Ala Gly Pro Arg Ser Gln Thr Glu Leu Phe Glu Thr Tyr Gly
 35 40 45

Asp Ser Leu Val Leu His Ala Lys Glu Arg Glu Val Gly Tyr Phe Lys
 50 55 60

Arg Ile Phe Lys Leu Pro Asn Asn Ile Leu Asp Asp Thr Ala Lys Ala
 65 70 75 80

Thr Tyr Lys Asn Gly Asn Ile Tyr Ile Tyr Ile Tyr Ile Tyr Ile Tyr
 85 90 95

Phe Leu Gln Ile
 100

<210> 16
 <211> 253
 <212> PRT
 <213> Plasmodium falciparum

<400> 16

Met Ile Lys Gln Asn Ile Lys Tyr Thr Gln Ile Ile Ser Ile Asp Asn
 1 5 10 15
 Ile Leu Asn Lys Ile Ala Asp Pro Ile Leu Ile Gly Phe Ser Ser Ser
 20 25 30
 Phe Asn Cys Asp Ile Ala Asn Lys Ala Val Gln Arg Glu Asp Glu Glu
 35 40 45
 Ser Met Gly Val Phe Cys Leu Lys Glu Lys Val Lys Asn Lys Ile Asn
 50 55 60
 Lys Lys Tyr Asn Lys Lys Asn Lys Asp Asn Ile Phe Lys Asn Asp Asn
 65 70 75 80
 Asn Thr Phe Ser Val Cys Glu Tyr Thr Glu Leu Asn Glu Cys Ile Leu
 85 90 95
 Asn Asn Lys Glu Leu Phe Lys Tyr Gly Asn Ile Cys His His Ile Ile
 100 105 110
 Thr Val Asp Phe Leu Lys His Ile Val Lys Asn Arg Ile Tyr Asn Lys
 115 120 125
 Leu Lys Leu His Lys Ile Ile Arg Lys Lys Gln Tyr Thr Asp Ile Pro
 130 135 140
 Ser Leu Ile Asn Asp Asn Asn Glu His Leu Ile Asn Ser Lys Val Phe
 145 150 155 160
 Cys Tyr Glu Tyr Phe Ile Phe Asp Ile Phe Lys Tyr Ala Arg Asn Ile
 165 170 175
 Leu Ser Leu Glu Val Asn Arg Gln Lys Glu Phe Tyr Pro Ile Lys Asn
 180 185 190
 Lys Asn Asn Glu Tyr Gly Ile Leu Asn Ala Gln Lys Ala Leu Ser Asn
 195 200 205
 Leu His Lys Ser Trp Leu Gln Tyr Lys Asn Ile Asn Ile Ile Asp Asn
 210 215 220
 Lys Asp Glu Glu Lys Ile Phe Val Lys Tyr Leu Pro Leu Phe Leu Met
 225 230 235 240

Met Glu His Ser Phe Leu Asn Cys His Lys Arg Gly Ile
 245 250

<210> 17
 <211> 984
 <212> PRT
 <213> Plasmodium falciparum

<400> 17

Met Glu Gly Phe Val Ala Leu Leu Ser Phe Leu Val Val Leu Val Phe
 1 5 10 15

Asn Lys Thr Ile Gly Tyr Asn Ile Lys Ser Gly Asn Thr Ser Asn Asn
 20 25 30

Ile Lys Tyr Val Asn Val Leu Asp Asn Asp Arg Asp Ile Asn Thr His
 35 40 45

Ser Val Leu Pro Glu Val Glu Asn Val Ile Glu Arg Lys Asp Ile Tyr
 50 55 60

Arg Gln Ile Asn Phe Met Glu Thr Phe Val Ser Ser Asn Asn Met Met
 65 70 75 80

His Asp Arg Glu Lys His Thr Ser Asn Asp Ser Gly Ser Tyr Glu Ile
 85 90 95

Thr Gly Ile Val Asp Gly Met Lys Ile Gly His Pro Ile Ser Val Ala
 100 105 110

Leu Gly Ser Gln Tyr Ser Asn Tyr Phe Asp Tyr Leu Gln Ile Val His
 115 120 125

Leu Asp Tyr Thr Asn Ser Arg Phe Ser Phe Thr Val Gly Glu Gly Lys
 130 135 140

Tyr Tyr Leu Arg Thr Tyr Gly Ser Thr Tyr Met Thr Pro Ser Ala Ile
 145 150 155 160

Lys Ile Lys Val Pro Cys Glu Lys Cys Lys Phe Ile Asn Ser Glu Tyr
 165 170 175

Ser Gly Ile Ile Lys Ile Ile Pro Tyr Glu Thr Asn Asn Asn Leu Phe
 180 185 190

Ile Tyr Asn Trp Val Leu Gln Thr Ser Ser Pro Leu Ala Leu Glu Asn
 195 200 205

Ile Asn Thr Val Phe Ser Asp Glu Ala Asp Leu Ile His Gly Asn Ser
 210 215 220

Leu Ser Glu Glu Phe Lys Ile Asp Ser Ser Ala Ala Ala Thr Ser Leu
 225 230 235 240

Asn Thr Phe Tyr Gly Ile Val Leu His Gly Ile Trp Ser Ser Glu Tyr
 245 250 255

Ala Glu Arg Leu Leu Thr Val Ile Ser Glu Phe Pro Asp Cys Val Lys
 260 265 270

Met Ser Ala His Asp Lys Asn Ala Arg Ser Lys Gln Arg Lys Asn Gln
 275 280 285

Lys Trp Ile Leu Val Asn Glu Asp Leu Gly Ser Phe Asp Met Lys Met
 290 295 300

Glu Val Cys Glu Glu Val Asn Cys Asp Tyr Ser Ala Ile Ile His Val
 305 310 315 320

Ser Lys His Ala Phe Glu Tyr Ser Lys Lys Leu Val His Asn Arg Gly
 325 330 335

Arg Asn Gly Arg Tyr Tyr Ser Arg Arg Val Glu Lys Ile Leu Ile Arg
 340 345 350

Ala Leu Leu Ser Leu Asp Phe Ser Leu Phe Ile Thr Tyr Phe Gln Gln
 355 360 365

Lys His Gly Val Thr Leu Leu Asp Pro Gln Tyr Asp Tyr Glu Leu Ile
 370 375 380

Thr Asn Met Ser Gly Tyr Ser Ser Asn Asn Tyr Gln Ser Trp Asn His
 385 390 395 400

Asn Leu Glu Glu Leu Val Glu Leu Ala Thr Ser Trp Asp Glu Tyr Pro
 405 410 415

Lys Gly Leu Gln Lys Val Gln Gly Leu Ser Tyr Leu Leu Arg Arg Lys
 420 425 430

Asn Gly Thr Lys His Pro Val Tyr Pro Thr Ala Pro Ala Val Ala Phe
 435 440 445

Pro Ala Gly Ser Gln Asn Asn Ser Phe Ile Glu Phe Met Glu Ser Ala
 450 455 460

Phe Val Asn Tyr Val Asp Ile Ser His Leu Val Ile His Glu Val Ala
 465 470 475 480

His Phe Ile Trp Val Asn Thr Val Ser Lys Glu Leu Lys Glu Lys Trp
 485 490 495

Ile Gln Ile Gly Gln Trp Tyr Lys Glu Pro Leu Ser Pro Ser Glu Trp
 500 505 510

Ala Thr Lys Leu Glu Val Glu Phe Val Ser Ala Tyr Ala His Asp Lys
 515 520 525

Asn Pro Ala Glu Asp Phe Ala Glu Ser Met Ala Thr Tyr Val Leu Asn
 530 535 540

Ser Lys Leu Leu Asn Ser Arg Ser Phe Asp Lys Phe Lys Trp Ile Gln
 545 550 555 560

Asp Asn Leu Phe Gly Gly Gly Phe Tyr Ile Thr Thr Gly Thr His Lys
 565 570 575

Phe Asp Val Ile Asn Leu Gly Asn Glu Val Tyr Tyr Phe Pro Gly Lys
 580 585 590

Val Thr Arg Val Arg Ala Lys Val Leu Gly Ser Pro Thr Glu Asp Lys
 595 600 605

Leu Val Lys Ile Tyr Ile Ser Leu Leu Ser Ser Asp Gly Ser Glu Gly
 610 615 620

Cys Ala Lys His Gly Tyr Ala Arg Ile Phe Ser Glu Gln Gln Thr Phe
 625 630 635 640

Arg Asp Leu Tyr Phe His Thr Glu Asp Arg Ser Pro Cys Ser His Lys
 645 650 655

Leu Tyr Gly Glu Phe Thr Met Asn Lys His Glu Ser Arg Gly Arg Trp
 660 665 670

Thr Ala Glu Ser Met Ile Phe Thr Gly Glu Asn Asn Ile Glu Arg Tyr
 675 680 685

Val Gly Leu Gly Ser Phe His Phe Tyr Leu Tyr Val Asn Asn Gln Asn
690 695 700

Glu Asp Val Glu Lys Pro Ile Pro Leu Leu Asp Ser Ile Ser Ile Tyr
705 710 715 720

Thr His Asn Ala Thr Glu Thr Asn Asp Ala Leu Leu Arg Leu His Val
725 730 735

Met Val Leu Glu Asn Glu Leu Ile Lys Glu His Gly Gly Pro Tyr Ala
740 745 750

Ser Phe Ala Ala His Glu Asn Lys Ser Tyr Ser Tyr Glu Ser Arg Thr
755 760 765

Tyr Lys Met Tyr Pro Pro Glu Phe Asn Thr Leu Met Leu Lys Ala Asp
770 775 780

Tyr Phe Ile Arg Asp Ile Asn Thr Arg Gly Phe Arg Glu Val Asn Met
785 790 795 800

Asp Ser Cys Lys Ser Tyr Thr Asn Met Asp Thr Arg Asn Leu Lys Cys
805 810 815

Phe Gln Val Leu Asn Pro Val Thr Ile Pro Lys Tyr Cys Ile Gly Ser
820 825 830

Thr Tyr Phe Leu Arg Gln Val Ser Ile Glu Asp Ile Ala Gly Asn Leu
835 840 845

Glu Thr Val Asn Ile Ser Ser Asp Lys Tyr Ser Ala Arg Leu His Pro
850 855 860

Ile Gly Val Arg Asp Lys Gln Lys Pro Val Val Ser Asn Val Arg Val
865 870 875 880

Ser Ser Lys Pro Ala Asn Glu Tyr His Asp Gly Glu Thr Ile Val Ser
885 890 895

Leu Ser Phe Asn Val His Asp Asn Leu Ser Gly Val Tyr Tyr Ile Phe
900 905 910

Val Tyr Leu Arg Asp Pro His Gly Gly Lys His Arg Ser Asp Ile Asp
915 920 925

Arg Ala Ser Leu Pro Thr Gly Thr Glu Asn Lys Gln Ile Asn His Lys
 930 935 940

Ile Leu Leu Pro Lys Gly Ser Met Gly Gly Thr Trp Met Leu Glu Glu
 945 950 955 960

Ile Lys Ala Val Asp Ser Cys Lys Asn Glu Ser Arg Asn Ile Tyr Thr
 965 970 975

His Ser Val Tyr Val Gln Asn Asp
 980

<210> 18
 <211> 1791
 <212> PRT
 <213> Plasmodium falciparum

<400> 18

Met Phe Tyr Ile Ile Tyr Phe Val Leu Ala Cys Val Leu Leu Ile Tyr
 1 5 10 15

Ile Arg Ile Arg Asn Lys Ala Thr Ser Thr Phe Phe Phe Phe Leu Ser
 20 25 30

Arg Phe Leu Leu Ile Cys Gly Phe Cys Ile Glu Leu Tyr Asp Asn Ile
 35 40 45

Ser Asn Asp Ile Leu Asn Val Leu Ile Thr Tyr Ser Phe Thr Val Ser
 50 55 60

Tyr Ile Phe Phe Met Ser Phe Lys Ile Leu Glu Ala Leu Leu Val Cys
 65 70 75 80

Ile Ser Ile Leu Leu Leu Thr Phe Gly Val Tyr Tyr Glu Lys Asn Lys
 85 90 95

Asn Met Ile Asp Ile Cys Thr His Phe Cys Ser Asn Pro Tyr Leu Ser
 100 105 110

Ile Asn Asn Leu Asp His Met Asn Ile Ser Cys Leu Cys Lys Lys Gln
 115 120 125

Ile Val Ile Phe Leu Ile Ser Leu Leu Ser Phe Thr Leu Ile Cys Leu
 130 135 140

Ser Met Lys Tyr Tyr Glu Ile Phe Tyr Leu Lys Lys Lys Phe Leu Phe

145		150		155		160
Arg Tyr Lys Gln Lys Val Asn Leu Ala Lys Gln Ile Glu Ile Leu His		165		170		175
Thr Met Leu Pro Asn Phe Leu Val Glu Tyr Leu Leu Ile Ser Asp Pro		180		185		190
Lys Asn Asp Gly Ile Met Val Gly Lys Asn Ile Ser Gly Glu Asp Arg		195		200		205
Gly Ile Ile Ser Val Ile Phe Cys Asp Ile Asp Asp Phe Gln Asn Met		210		215		220
Val Ser Thr Leu Gln Pro His Val Leu Val Glu Thr Leu Asp Asn Leu		225		230		235
Tyr Leu Tyr Phe Asp Lys Cys Ile Lys Tyr Phe Asn Cys Ile Lys Ile		245		250		255
Glu Thr Val Phe Glu Ser Tyr Leu Ala Ala Ser Gly Leu Ser Glu Lys		260		265		270
Lys Asn Asn Ala Leu Asp Lys Ile Met Tyr Asp Thr Lys Cys Ala Ile		275		280		285
Lys Leu Ala Ile Ala Gln Leu Ser Ala Lys Tyr Tyr Ile Ser Tyr Lys		290		295		300
Val Leu Asp Thr Arg Glu His Phe Ser Asp Asn Ser Thr Ser Tyr Asp		305		310		315
Lys Tyr Ile Asn Lys Asn Ile Ser Leu Lys Ile Gly Ile His Thr Gly		325		330		335
Lys Ala Ile Ser Gly Val Ile Gly Ser Val Lys Pro Gln Tyr Ala Leu		340		345		350
Phe Gly Asp Thr Val Asn Thr Ala Ser Arg Met Lys Ser Thr Ser Leu		355		360		365
Pro Asp His Ile His Val Ser Tyr Asp Thr Tyr Lys Tyr Leu Lys Glu		370		375		380
Asp Asn Thr Phe Ile Trp Lys Glu Arg Lys Val Phe Ile Lys Gly Lys		385		390		395
						400

Gly Lys Met Lys Thr Tyr Leu Leu Val Asp Ile Leu Asp Asp Val Lys
 405 410 415

Arg Lys Gly Glu Ser Leu Asn Tyr Tyr Ser Ser Ser Asn Leu Leu Leu
 420 425 430

Ser Gln Leu Gly Ser Glu Ala Val Ser Ile Tyr Glu Glu Arg Glu Asp
 435 440 445

Ile Lys Glu Gly Ser Met Asp Ile Ile Lys Glu Ser Ser Arg Asp Ile
 450 455 460

Ile Lys Glu Asp Ser Arg Asp Ile Ile Lys Glu Ile Ser Thr Asn Ile
 465 470 475 480

Ser Lys Ser Ser Ser Arg Asn Ile Ser Lys Ser Ser Ser Arg Ser Ile
 485 490 495

Ser Asp Ile Lys Glu Gly Gln Ile Ile Asp Lys Glu Asp Leu Ile Phe
 500 505 510

Lys Ile Asn Arg Met Lys Asn Lys Ile Asp Ser Arg Tyr Ser Lys Arg
 515 520 525

Ile Asp Lys Glu Ser Arg Asp Lys Ile Ser Asp Lys Thr Asn His Val
 530 535 540

Leu Asp Glu Val Val Lys His Ser Asp Ile His Leu Leu Asn Tyr Glu
 545 550 555 560

Ile Asn Asn Lys Arg Cys Lys Lys Met Lys Gly Asp Thr Asn Asn Glu
 565 570 575

Asn Lys Leu Ile Gly Asp Ile Phe Asn Met Tyr Asp Lys Lys Ile Lys
 580 585 590

Tyr Ile Tyr Lys Lys Asn Tyr Lys Ser Lys Ser Met Glu Asn Ile Ser
 595 600 605

Phe Ile Lys His Tyr Arg Asn Thr Lys Tyr Lys Lys Ser Asp Tyr Leu
 610 615 620

Leu Leu Asp Asn Lys Gly Glu Ser Lys Lys Phe Lys Arg Asn Thr Ser
 625 630 635 640

1115		1120		1125
Asn Thr Thr Lys Leu Lys Gly Met Gly Asn Asn Thr Asn Asp Ile				
1130		1135		1140
Ser Lys Asn Lys Gly Lys Asn Lys Leu Gly Lys Lys Ile Ser Phe				
1145		1150		1155
Phe Ser Met Asn Asn Lys Tyr His Glu Ser Glu Ile Met Asn Glu				
1160		1165		1170
Glu Asp Asn Lys Asn Met Leu Asn Leu Thr Gln Ser Gln Ile Ile				
1175		1180		1185
Asn Lys Asp Lys Tyr Asn Tyr Phe Thr His Cys Pro Ser Leu Lys				
1190		1195		1200
Lys Lys Lys Ser Val Phe Thr Lys Ile Asn Asn Leu Phe Lys Asn				
1205		1210		1215
Tyr Phe Lys Ser Ile Asp Val His Glu Lys Phe Gly Phe Ser Lys				
1220		1225		1230
Lys Phe Lys Phe His Ser Lys Asp Ser Asp Asp Ile Lys Gly Asn				
1235		1240		1245
Asn Asn Lys Ile Ser Lys Asn Arg Tyr Asn Asn Asn Asn Asn Asn				
1250		1255		1260
Asn Asn Ser Asn Tyr Ser Asn Ile Asp Ser Gly Lys Tyr Ser His				
1265		1270		1275
Asn Asn Lys Lys Asn His His His Asn Asn Asn Lys Tyr His His				
1280		1285		1290
His Asn Asn Asn Lys Tyr His His His Asn Asn Asn Lys Tyr His				
1295		1300		1305
His Gln Asn Asn Asn Tyr Glu Lys His His His Ser Asn Asn Ser				
1310		1315		1320
Arg Val Met Leu Ser Lys Gly Glu Lys Thr Glu Lys Asn Glu Asn				
1325		1330		1335
Val Asp Tyr Ala Tyr Gln Phe Asp Asn Tyr Asp Lys Lys Leu Leu				
1340		1345		1350

Lys Lys Leu Thr Ser Asn Leu Gln Leu Asn Lys Lys Asn Val Lys
 1355 1360 1365
 Asn Phe Asn Met Phe Tyr Tyr Lys Phe Asn Asp Glu Glu Leu Glu
 1370 1375 1380
 Glu Glu Tyr Thr Arg Asn Tyr Tyr Arg Glu Ile Ile Asn Ile Asp
 1385 1390 1395
 Leu Thr Lys Lys Leu Ile Ile Ile Phe Ile Phe Thr Glu Ile Phe
 1400 1405 1410
 Leu Ser Leu Cys Asn Ile Ile Glu Leu Ser Phe Tyr Glu Lys Lys
 1415 1420 1425
 Leu Arg Tyr Asn Asp Ser Ile Val Ile Ile Trp Leu Ile Arg Ser
 1430 1435 1440
 Ile Tyr Leu Phe Ile Ile Thr Tyr Ile Trp Ile Ile Leu Lys Thr
 1445 1450 1455
 Lys Leu Lys Glu Tyr Lys Asn Asn Ser Ser Lys Met Met Trp Thr
 1460 1465 1470
 Ile Phe Ile Leu Asn Ile Phe Leu Cys Ser Trp Gly Ile Ile Leu
 1475 1480 1485
 Ile Asp Leu Ser Cys Ile His Tyr Ser Met Leu Leu Gly Asn Lys
 1490 1495 1500
 Asn Glu Arg Ala Leu Phe Phe Met Lys Asp Ala Ser Glu Leu Ile
 1505 1510 1515
 Ile Cys Ile Gln Leu Ile Phe Ile Lys Asn Met Leu Phe Lys His
 1520 1525 1530
 Lys Phe Phe Phe Phe Val Phe Phe Tyr Ile Phe Leu Ile Tyr Ser
 1535 1540 1545
 Phe Ser Lys Leu Phe Ser Ile His Thr Cys Gln Thr His Ile Cys
 1550 1555 1560
 Cys Ser Ile Ile Leu Phe Ile Ser Ile Asn Ile Leu Tyr Phe Trp
 1565 1570 1575

<210> 19
 <211> 1815
 <212> PRT
 <213> Plasmodium falciparum

<400> 19

Met Tyr Ile Phe Phe Phe Ile Leu Phe Tyr Phe Tyr Val Met Ser Thr
 1 5 10 15

Tyr Thr Phe Cys Phe Leu Pro Val Leu Gln Thr Gln Leu Gly Lys Ile
 20 25 30

Ile Asn Lys Val Ile Ser Ser Lys Tyr Phe Phe Lys Asn Asp Asp Ile
 35 40 45

Cys Tyr Asn Lys Asn Asn Leu Asp Phe Lys Trp Tyr Leu Lys Lys Asp
 50 55 60

Arg Lys Lys Ser Arg Lys Ile Lys Lys Lys Gln Lys Lys Arg Lys Arg
 65 70 75 80

Lys Met Ile Met Met Lys Arg Gly Val Glu Asn Val Lys Asn Ala Asp
 85 90 95

Ser Ser Asn Asn Asp Val Cys His Asp Gln Asn Asn Asn Asn Phe Asn
 100 105 110

Asp Pro Leu Val Ser Lys Asn Thr Asn Tyr Asn Tyr Leu Tyr Thr Asn
 115 120 125

Asn Asn Glu Asn Asn Met Lys Glu Ser Thr Phe Leu Lys Ile Asp Glu
 130 135 140

Ser Tyr Leu Ser Thr Ser Tyr Ile Leu Asn Gly Lys Phe Val Ser Gly
 145 150 155 160

Asn Asn Ile Ser Asp Asn Lys Asn Asp Leu Asn Glu Lys Lys Tyr Ile
 165 170 175

Asn Ile Lys Arg Thr Asn Ser His Asn Asp Thr Ser Ser Leu Ser Ile
 180 185 190

Ser Gln Asn Asn Phe Ser Lys Ile Lys Lys Lys Lys Gly Ala Ser Ser
 195 200 205

Ile Asn Ser Tyr Asp Glu Ser Ser Pro Asn Val Ser Pro Pro Ser Met
 210 215 220

Tyr Ser Ser Glu Asn Leu Ser Tyr Asn Glu Lys Arg His Asn Asn Asn
 225 230 235 240

Ser Asp Asn Asn Asn Asp Arg Asn Met Lys Ser Tyr Asn Tyr Ser Ser
 245 250 255

Ser Asn Ile Asn Lys Asn Cys Ser Ser Ser Ser Thr Ser Ser Ser Ile
 260 265 270

Ser Ser Ser Ser Ile Ser Ser Ser Ser Ile Ile Ser Ser Ser Ile Ile
 275 280 285

Ser Ser Ser Cys Ser Ser Val Thr Cys Ser Asp Ser Ser Leu Asn Ile
 290 295 300

Tyr Asn Thr Lys Arg Ser Ser His Gly Ser His Asn Gln Phe Cys Gly
 305 310 315 320

Ser Met Ser Cys Tyr Glu Lys Asp Lys Lys Lys Asn Arg Leu Asp Asn
 325 330 335

Lys Asn Lys Met Lys Asn Lys Asn Ile Leu Asn Lys Lys Lys Lys Tyr
 340 345 350

Lys Asn Lys Lys Met Pro Lys Thr Ile Asp Gly Asn Asp Thr Ser Leu
 355 360 365

Leu Leu Ser Ser Ser Thr Ser Ser Cys Asn Thr Lys Val Ser Phe Asp
 370 375 380

Asn Asn Glu Asn Tyr Gly Ile Ile Lys Glu Phe Ser Leu Cys Lys Ile
 385 390 395 400

Asn Leu Phe Ile Lys Glu Ala Lys Leu Leu Phe Phe Asn Lys Asn Ile
 405 410 415

Ser Ile Ser Asp Val Ser Leu Tyr Val Thr Thr Ile Met Glu Asp Lys
 420 425 430

Lys Tyr Ile Gly Lys Leu Arg Lys Leu Ser Ser Arg Thr Leu Pro Met
 435 440 445

Asn Asn Leu Ile Ile Asn Glu Tyr Ile Asn His Asn Ile Lys Asp Val
 450 455 460

Tyr Thr Asp Ile Ile Ile Asn Ile Arg Tyr Lys Asn Arg Lys Lys Glu
465 470 475 480

Lys Glu Asp Ile Ile Leu Gly Arg Ala Ile Ile Pro Leu Phe Leu Ile
485 490 495

Leu Asn Thr Tyr Lys Trp Lys Ile Lys Lys Ile Lys Asn Lys Ile Arg
500 505 510

Tyr Cys Thr Lys Cys Phe Leu Trp Leu His Ile Phe Pro Cys Asn Asn
515 520 525

Lys Leu Phe Asn Tyr Lys Phe Phe Lys Pro Val Glu Gly Phe Glu Glu
530 535 540

Tyr Gly Met Leu Asn Pro Leu Tyr Thr Leu Gly Phe Leu Asn Ile Gln
545 550 555 560

Ile Lys Ile Ile Phe Lys Arg Asn Pro Leu Phe Leu Thr Phe Leu Ser
565 570 575

Asn Ile Arg Lys Pro Leu Phe Tyr Tyr Lys Leu Pro Val Gln Phe Glu
580 585 590

Pro Leu Tyr Cys Gln Tyr Tyr Ser Glu Asn Leu Tyr Val Tyr Ala Lys
595 600 605

Asn Ile Pro Leu Trp Ile Tyr Lys Phe Phe Tyr Ile Phe His Tyr Lys
610 615 620

Arg Leu Glu Met Ile Ser Leu Asn Cys Tyr Asp Tyr Ile Cys Ile Leu
625 630 635 640

Ile Phe Trp Leu Phe Phe Phe Asp Leu Val Val Leu Ser Pro Phe Ser
645 650 655

Leu Ile Phe Val His Leu Phe Phe Cys Ile Phe Phe Ile Ser Leu Ser
660 665 670

Tyr Lys Tyr Gly Lys Phe Val Pro Pro Tyr Tyr Lys Lys Lys Asn Leu
675 680 685

Phe Tyr Asn Phe Arg Pro Ile Arg Val Ser Arg Val Ser Arg Arg Asn
690 695 700

Cys Asp Tyr Thr Lys Arg Arg Ile Glu Thr Thr Asn Phe Ile Leu Asn
705 710 715 720

Asp Gln Lys Asn Val Glu Ile Tyr Asn Arg Glu Lys Lys Leu Asp Leu
725 730 735

Leu Asp Asp Asn Asn Val Asp Ala Asn Tyr Cys Lys Tyr Pro Tyr Cys
740 745 750

Ser Glu Glu Asn Asn Met Asp Lys Leu Asn Lys Asp Gly Arg Asp Val
755 760 765

Asn Lys Gly Val Asp Lys Asn Ile Ile Lys Gly Lys Asn Met Met Thr
770 775 780

Arg Gly Gly Gly Leu Asn Ile Tyr Asp Ala Cys Lys Met Phe Ile Lys
785 790 795 800

Gly Asp Thr Val Met Lys Ala Asn Ile Ile Asn Asp Asn Ile Val Tyr
805 810 815

Glu Asn Phe Ile Lys Asp Gly Ile Lys Lys Asn Asp Val Met Met Asp
820 825 830

Ser Glu Glu Asp Lys Glu Ile Asn Ala Val Tyr Ile Asn Asn Lys Asn
835 840 845

Val Tyr Asn Asn Asn Asn Ala Pro Val Ser Cys His Asp Cys Asp Asp
850 855 860

Pro Asn Asn Leu Ser Val His Val His Lys Glu Glu Asn Asn Ser Thr
865 870 875 880

Ser Asn Lys Met Ile Leu Pro Ser Val Cys Ser Glu Asn Ser Leu Lys
885 890 895

Glu Thr Met Gly Asn Gln Ser Met Glu Asn Asn Asn Lys Ile Asn Asn
900 905 910

Glu Asn Asn Asn Asp Val Asp Ser Val Glu Lys Thr Asp Ile Leu Leu
915 920 925

Asn Leu Ser Asn Gly Lys Asn Asn Gly Asn Val Thr Ser Ser Leu Cys
930 935 940

Glu Asn Leu Phe Val Tyr Asn Gln Asp Lys Ile Gln Arg Lys Lys Lys
 945 950 955 960

Val Pro Tyr Lys Asn Lys Glu Arg Asp Asn Lys Asp Asp Leu Asp Glu
 965 970 975

Lys Lys Asp Met Tyr Ile Cys Asn Asp Asp Ser Ser Val Ile Thr Ser
 980 985 990

Ser Glu Lys Gly Val Thr Lys Glu Arg Ile His Met Asn Lys Glu Lys
 995 1000 1005

Leu Asn Tyr Asn Gly Ser Met Glu Cys Ser Ser Val Cys Val Glu
 1010 1015 1020

Lys Asn Asn Met Ser Tyr Ile Ala Arg Arg Ile Gln Asn Met Met
 1025 1030 1035

Tyr Asp Thr Lys Glu Lys Met Lys Leu Asp Gln Ile His Met Asn
 1040 1045 1050

Lys His Met Ser Gly Phe Met Lys Leu Phe Asn Val Lys His Val
 1055 1060 1065

Glu Asn Glu Lys Glu Asn Asp Ile Asp Lys Tyr His Asp Lys Gly
 1070 1075 1080

Glu Ser Asp Lys Gln Val Pro Ser Ser Val Gly Ser Tyr Lys Leu
 1085 1090 1095

Met Ile Ser Gln Glu Ala Glu Phe Glu Glu Glu Glu Phe Asp Glu
 1100 1105 1110

Lys Glu Glu Phe Asp Glu Lys Glu Glu Phe Asp Glu Glu Glu Glu
 1115 1120 1125

Glu Gly Gly Gln Asp Glu Glu Ser Lys Lys Met Ser Arg Val Lys
 1130 1135 1140

His Ile Lys Lys Arg Glu Asn Ile Ile Asn Ile Glu Gly Glu Asn
 1145 1150 1155

Ile Leu Ser Ser Asp Gly Lys Lys Ser Glu Tyr Ile Ile Lys Asp
 1160 1165 1170

Ser	Met	Asn	Asn	Thr	Glu	Tyr	Ile	Asn	Asp	Ile	Ile	Tyr	Tyr	Asn
1175						1180					1185			
Asn	Cys	Asp	Asn	Ile	Leu	Glu	Asp	Asn	Lys	Ser	Glu	Tyr	Asn	Thr
1190						1195					1200			
Ser	Met	Asn	Glu	Arg	Val	Met	Asp	Asn	Lys	Gln	Glu	Val	Asn	Lys
1205						1210					1215			
Arg	Ser	Asn	Asn	Phe	Phe	Phe	Ser	Tyr	Asn	Asn	Asn	Asn	Asn	Asn
1220						1225					1230			
Asn	Asn	Ile	Asn	Asn	Asn	Asn	Asn	Asn	Lys	Asn	Glu	Ser	Val	Trp
1235						1240					1245			
Arg	Asn	Leu	Leu	Gly	Ile	Pro	Ser	Ser	Asn	Ile	Glu	Thr	Val	Asn
1250						1255					1260			
Leu	Asn	Ser	Asn	Asn	Cys	Thr	Glu	Ile	Lys	Asn	Ser	Asn	Lys	Lys
1265						1270					1275			
Phe	Asn	Ile	Ile	Asp	Thr	Tyr	Gly	Asn	Asn	Thr	Leu	Gln	Asp	Lys
1280						1285					1290			
Ser	Asn	Ile	Ile	Asp	Leu	Arg	Lys	Lys	Tyr	Pro	Tyr	Met	Pro	Phe
1295						1300					1305			
Val	Lys	Ser	Pro	Phe	His	Asn	Phe	Tyr	Leu	Tyr	Met	Asn	Thr	Asn
1310						1315					1320			
Asp	Asn	Lys	Asn	Ile	Ser	Ile	Phe	Ser	Asn	Asn	Val	Glu	Val	Pro
1325						1330					1335			
Asn	Val	His	Val	Ile	Leu	Asn	Arg	Phe	Ile	Thr	Leu	Ile	Thr	Trp
1340						1345					1350			
Thr	Gln	His	Val	Ser	Gly	Ile	Phe	Thr	Met	Val	Tyr	Glu	Lys	Ile
1355						1360					1365			
Lys	Tyr	Ala	Phe	Asn	Trp	Glu	Phe	Ser	Phe	Tyr	Thr	Leu	Val	Asn
1370						1375					1380			
Ile	Leu	Ile	Leu	Phe	Leu	Ile	Cys	Tyr	Ser	Ile	Ser	Phe	Ile	Ile
1385						1390					1395			

Tyr Met	Phe Ser Tyr Ile	Pro	Phe Val Phe Phe Arg	Phe Leu Phe
1400		1405		1410
Phe Val	Thr Cys Ser Tyr	Phe	Ile Ile Arg Ser Tyr	Glu Leu Thr
1415		1420		1425
Glu Asp	Gly Asn Arg Ala	Cys	Leu Tyr Tyr Lys Lys	Arg Lys Ile
1430		1435		1440
Gln Phe	Leu Lys Asn Arg	Lys	Ile Ser Leu Ala His	Gly Leu Phe
1445		1450		1455
Glu Thr	Tyr Lys Trp Lys	Asn	Ile Ile Lys Ile Ile	Lys Lys Thr
1460		1465		1470
Leu Lys	Lys Lys Asp Thr	Asn	Ile Phe Lys Tyr Ile	Cys Leu Thr
1475		1480		1485
Cys Ala	Phe Lys Ile Tyr	Lys	Leu Phe Lys Ile Ile	Phe Glu Asn
1490		1495		1500
Ile Leu	Leu Tyr Ile Leu	Phe	Ile Leu Phe Phe Ile	Lys Asn Trp
1505		1510		1515
Tyr Thr	Arg Leu Leu Ile	Leu	Lys Asp Ile Glu His	Met Gln Ile
1520		1525		1530
Ala Lys	Leu Gln Gly Phe	Lys	Asn Leu Tyr Phe Phe	Ile His Asn
1535		1540		1545
Arg Ile	Ile Lys Arg Glu	Gln	Lys Asn Val Met Ser	Asn Thr Ser
1550		1555		1560
Ser Asn	Glu Ile Asn Asn	Arg	Lys Ser Ser Val Ile	Lys Ile Val
1565		1570		1575
Asn Ile	Asp Asp Met Glu	Lys	Asn Glu Glu Asn Met	Asn Lys Asn
1580		1585		1590
Asp Asn	Asn His Asp Lys	Asn	Asp Asp Ile Val Asp	Val Asn Asn
1595		1600		1605
Val His	Met Asn Ile Asn	Asn	Asp Asn Met Asn Thr	Asn Asn Glu
1610		1615		1620

Tyr Glu Ile Ile Lys Arg Arg Asn Gln Asn Asn Met Leu Asp Gly
 1625 1630 1635

Lys Arg Lys Ser Val Lys Ser Leu Met Tyr Glu Asn Tyr Lys Asn
 1640 1645 1650

Leu Glu Ser Tyr Val Tyr Ser Ser Ser Asp Lys Glu Ala Val Ser
 1655 1660 1665

Ile Ile Asn Glu Asp Asp Ile Ile Asp Glu Glu Glu Glu Glu Gly
 1670 1675 1680

Asn His Gln Lys Glu Lys Leu Asn Lys Asp Asn Ile Asn Leu Asp
 1685 1690 1695

Lys Lys Asn Ile Asn Thr Tyr Gln Asp Ile His Ile Asp Gln Glu
 1700 1705 1710

Ile Gln Pro Cys Asp Asp Glu Asn Asp Asp Lys Leu Ser Leu Ser
 1715 1720 1725

Gln Val Thr Asp Asn Gly Ala Met Asn Val Asn Val Asp Ile Phe
 1730 1735 1740

Leu His Tyr Tyr Phe Lys Lys Arg Lys Tyr Asp Leu Phe Asn Asn
 1745 1750 1755

Phe Ile Asn Ile Asn Arg Asn His Met Tyr Thr Tyr Lys Asp Ile
 1760 1765 1770

Asn Leu Phe Tyr Ser Asn Glu Asp Gln Lys Met Asn Asn Ile Asn
 1775 1780 1785

Tyr Gly Glu Tyr Leu Asn Ser Asp Asp Ala Tyr Ser Ser Ser Tyr
 1790 1795 1800

Asp Tyr Asn Lys Arg Gln Lys Lys Lys His Val Lys
 1805 1810 1815

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<211> 4544

<212> PRT

<213> Plasmodium falciparum

<400> 20

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 1 5 10 15

Phe Thr Glu Asn Glu Asp Asp Leu Glu Asn Val Asn Met Lys Ser Ser
 20 25 30

Thr Lys Gly Ile Leu Asp Asp Asp Asn Ile Asp Asn Ser Asp Asp Asn
 35 40 45

Asp Ser Asp Asn Asn Asn Gly Asp Asn Ser Asp Asp Asp Asp Asp
 50 55 60

Asp Asp Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Phe
 65 70 75 80

Lys Lys Tyr Lys Glu Glu Glu Glu Lys Ile Lys Lys Phe Ile Glu Ile
 85 90 95

Lys Lys Asp Ile Asn Asn Ile Glu Ser Cys Tyr Met Leu Asn Met Phe
 100 105 110

Lys Phe Asn Leu Glu Ser Phe Lys Met Tyr Leu Ile Asn Ile Ile Glu
 115 120 125

Asn Glu Ala Leu Glu Cys Ala Lys Asn Val Ile Glu Pro Leu Lys Lys
 130 135 140

Lys Ser Asp Met Leu Ile Lys Lys Ile Asn Thr Leu Lys Ile Lys Leu
 145 150 155 160

Lys Lys Lys Ile Ile Asp Ile Asp Ser Leu Tyr Tyr Val Ile Asn Ile
 165 170 175

Ile Lys Lys Ile His Ile Phe Glu Ser Thr Ile Asp Ile Val Leu Asn
 180 185 190

Pro Ile Asn Asp Met Leu Asn Ile Leu Glu Phe Tyr Met Ser Asn Phe
 195 200 205

Leu Lys Lys Gln Met Asp Ser Leu Arg His Ser Asn Asn Tyr Asp Glu
 210 215 220

Glu Glu Asn Tyr Gln Ile Lys Phe Ile Asn Asn Leu Glu Lys Lys Lys
 225 230 235 240

Ser Ser Gly Gln Leu Tyr Asn Leu Asp Asp Ser Tyr Asn Lys Asn Leu
 245 250 255

Leu Phe Thr Phe Asn Lys Leu Asn Val Met Lys Lys Lys Phe Val Ser
 260 265 270

Phe Tyr Lys Phe Glu Val Glu Lys Lys Asn Leu Ile Leu Ser Lys Phe
 275 280 285

Asn Glu Leu Ile Asn Leu Thr Lys His Val Glu Glu Glu Ile Gln Glu
 290 295 300

Lys Lys Thr Thr Met Lys Asn Glu Leu Ile Asn Asn Ile Tyr Ser Phe
 305 310 315 320

Lys Ile Asp Ile Lys Thr Phe Arg Glu His Phe Leu Lys Met Asn Phe
 325 330 335

Lys Ser Glu His Ile Asn Pro Leu Asn Ala Phe Glu Leu Leu Lys Arg
 340 345 350

Tyr Lys Glu Glu Ile Asn Met Leu Lys Asn Lys Tyr Asn Ser Tyr Tyr
 355 360 365

Lys Gly Glu Ser Ile Phe Gly Leu Lys His Gln Thr His Ser Asp Leu
 370 375 380

Phe Leu Ser Ser Asn Glu Ile His Asn Phe Tyr Ser Leu Tyr Asp Leu
 385 390 395 400

Tyr Val Gln Leu Lys Glu Lys Leu Asn Glu Trp Lys Asn Leu Lys Trp
 405 410 415

Phe Asp Gly Ile Gln Lys Met Lys Glu Leu Lys Asn Glu Ile Leu Ser
 420 425 430

Phe Glu Lys Lys Cys Ser Gln Leu Pro Lys Asn Leu Lys Ile Ile Val
 435 440 445

Ile Tyr Lys Asn Leu Met Lys Glu Ile Phe Tyr Phe Lys Glu Ile Thr
 450 455 460

Pro Ile Val Asp Glu Leu Glu Lys Lys Asn Ile Leu Lys Arg His Trp
 465 470 475 480

Ile Glu Ile Ile Asn Ile Leu Lys Glu Lys Lys Lys Lys Asp Ile Thr
 485 490 495

Gly Lys Glu Lys Lys Ile Gln Lys Lys Ser Tyr Ala Asp Glu Gln Lys
 500 505 510

Asp His Pro Lys Asp Asn Ile Asn Asn Lys Ser Asn Asn Asn Lys Asn
 515 520 525

Asn Asn Lys Asn Asn Asn Ile Asn Asn Asn Asn Asn Gln Val Ile Asn
 530 535 540

Glu Lys Val His Gln Ile Asp Pro Leu Val Asp Met Glu Lys Asn Asn
 545 550 555 560

Val Leu Glu Asp Leu Asn Val Gln Gln Met Ser Asn Glu Asn Lys Asn
 565 570 575

Val Lys Gln Val Glu Leu Ile Asn Asp Leu Glu His Gln Thr Asn Lys
 580 585 590

Thr Ser Thr Gln Lys Asp Val Phe Glu Lys Asn Asp Asn Asn Asp Asn
 595 600 605

Asn Asp Lys Asn Asn Ile Asn Leu Ile His Gly Asp Thr Asp Glu Asn
 610 615 620

Met Tyr Asn Thr Ser Glu Phe Glu Asp Glu Lys Met Lys Lys Lys Asn
 625 630 635 640

Ile Glu Asn Lys Lys Arg Ile Asn Asp Gln Thr Asp Glu Glu Ile Ile
 645 650 655

Ser Lys Lys Asp Ile Ser Phe Gln Asp Gly Gly Leu Leu Glu Glu Ser
 660 665 670

Ala Tyr Leu Asp Glu Glu Glu Tyr Ile Asn Asn Leu Asn Lys Leu Asp
 675 680 685

Leu Asp Asn Met Asp Phe Phe Ile Lys Asp Ile Ile Asn Tyr His Leu
 690 695 700

Leu Lys Lys Lys Asp Asp Ile Leu Asp Ile Cys Asp Ser Ala Glu Lys
 705 710 715 720

Glu Ala Ser Ile Glu Glu Lys Ile Asn Glu Gln Tyr Lys Ile Trp Asn
 725 730 735

Glu Thr Cys Phe Gln Phe Ser Lys Trp Lys Asn Arg Asp Tyr Ala Cys

740	745	750
Ile Leu Val Gly Ser Lys Val	Ile Glu Ile Gln Glu Ser	Leu Glu Glu
755	760	765
Ser Gln Ile Leu Leu Asn Asn	Ile Asn Ser Thr Lys Tyr	Ser Lys Pro
770	775	780
Phe Lys Ser Lys Leu Leu Leu Leu	Asn Lys Leu Ser Asp Cys	Ser
785	790	800
Asp Ile Val Glu Arg Trp Ile Lys	Val Gln Met Leu Trp Cys	Ser Met
805	810	815
Glu Ser Val Phe Thr Ser Gly Asp	Ile Ala Arg Gln Met	Pro Ile Glu
820	825	830
Ser Lys Arg Phe His Gln Ile Asp	Lys Asp Trp Ile Asn Ile Ile	Asn
835	840	845
Ile Ala Asn Glu Ser Ser Ile Val	Ile Glu Cys Cys Gln Ser Ser	Met
850	855	860
Leu Lys Glu Leu Leu Pro Asn Met	Gln Lys Gly Leu Glu Ser Cys	Gln
865	870	880
Lys Ser Leu Glu Ser Tyr Leu Glu	Gly Lys Arg Ser Lys Phe	Pro Arg
885	890	895
Phe Tyr Phe Val Ser Asn Leu Val	Leu Leu Lys Ile Leu Ser Gln	Gly
900	905	910
Ser Asp Ile Asn Ile Ile Gln Ser	Glu Leu Ile Lys Leu Phe Asp	Ala
915	920	925
Ile Asn Tyr Leu Thr Ile Lys Thr	Ile Gln Asn Lys Lys Arg Ile	Ile
930	935	940
Cys Ile Asn Asn Lys Glu Lys Asp	Asp Ile Glu Thr Val Gln Leu	Val
945	950	955
Asn His Val Thr Ile Asp Gly Asn	Ile Glu Asn Trp Leu Ile Leu	Leu
965	970	975
Glu Lys Glu Met Gln Lys Ala Ile	Lys Lys Glu Cys Lys Leu Gly	Val
980	985	990

Ser Asn Ser Ser Gln Leu Phe Lys Thr Leu Asn Leu Lys Glu Phe Cys
 995 1000 1005

Asp Lys Asn Ile Ala Gln Val Ala Leu Ile Cys Leu Gln Val Met
 1010 1015 1020

Trp Thr Asn Asp Ile Glu Lys Cys Ile Tyr Lys Tyr His Ser Glu
 1025 1030 1035

Lys Asn Ile Leu Lys Val Thr Asn Lys Lys Ile Asn Tyr Ile Met
 1040 1045 1050

Ser Glu Leu Val Asn Ile Cys Leu Ser Asp Leu Gly Thr Lys Leu
 1055 1060 1065

Asn Arg Thr Lys Tyr Glu Thr Leu Val Thr Ile His Val His Gln
 1070 1075 1080

Arg Asp Leu Phe Thr Glu Ile Ser Ala Lys Ile Lys Glu His Lys
 1085 1090 1095

Ile Lys Thr Thr Thr Asp Phe Asp Trp Ile Lys Gln Thr Arg Ile
 1100 1105 1110

Tyr Tyr Lys Val Glu Lys Asn Ile Ile Leu Ile Ser Ile Ser Asp
 1115 1120 1125

Val Asp Phe Ile Tyr Ser Tyr Glu Tyr Leu Gly Ile Lys Glu Arg
 1130 1135 1140

Leu Cys Ile Thr Pro Leu Thr Asp Arg Cys Tyr Leu Thr Cys Ala
 1145 1150 1155

Gln Ala Leu Gly Leu Cys Tyr Gly Gly Ala Pro Ala Gly Pro Ala
 1160 1165 1170

Gly Thr Gly Lys Thr Glu Thr Val Lys Asp Leu Gly Arg Thr Leu
 1175 1180 1185

Gly Ile Tyr Val Ile Val Thr Asn Cys Ser Asn Gln His Lys Tyr
 1190 1195 1200

Lys Asp Met Ala Lys Ile Phe Lys Gly Leu Cys Arg Ser Gly Leu
 1205 1210 1215

Trp	Gly	Cys	Phe	Asp	Glu	Phe	Asn	Arg	Ile	Asn	Leu	Asp	Val	Leu
1220						1225					1230			
Ser	Val	Val	Ala	Met	Gln	Ile	Glu	Ser	Ile	Val	Thr	Ala	Lys	Lys
1235						1240					1245			
Gln	Ser	Leu	Lys	Tyr	Phe	Leu	Phe	Pro	Gly	Asp	Ser	Lys	Ser	Ile
1250						1255					1260			
Asn	Leu	Asn	Pro	Ser	Ser	Ala	Tyr	Phe	Ile	Thr	Met	Asn	Pro	Gly
1265						1270					1275			
Tyr	Ala	Gly	Arg	Gln	Leu	Leu	Pro	Glu	Asn	Leu	Lys	Ile	Phe	Phe
1280						1285					1290			
Arg	Phe	Ile	Ser	Met	Met	Val	Pro	Asp	Arg	Gln	Ile	Ile	Ile	Lys
1295						1300					1305			
Val	Lys	Leu	Ala	Ser	Val	Gly	Tyr	Leu	Asp	Ile	Asp	Asn	Leu	Ser
1310						1315					1320			
Asn	Lys	Phe	Lys	Ser	Leu	Tyr	Asn	Leu	Cys	Glu	Glu	Gln	Leu	Ser
1325						1330					1335			
Lys	Gln	Lys	His	Tyr	Asp	Phe	Gly	Leu	Arg	Asn	Ile	Leu	Ser	Val
1340						1345					1350			
Leu	Arg	Thr	Ala	Gly	Asp	Thr	Lys	Arg	Ser	Ala	Gly	Pro	Asn	Glu
1355						1360					1365			
Asn	Asp	Glu	Glu	Met	Leu	Leu	Met	Arg	Thr	Leu	Arg	Asp	Met	Asn
1370						1375					1380			
Leu	Ser	Lys	Leu	Ile	His	Asp	Asp	Val	Leu	Leu	Phe	Leu	Ser	Leu
1385						1390					1395			
Leu	Asn	Asp	Val	Phe	Pro	Lys	Phe	His	Asn	Ile	Thr	Lys	Lys	Ser
1400						1405					1410			
Phe	Gln	Leu	Ile	Glu	Glu	Asn	Val	Leu	Gln	Ile	Ile	Lys	Lys	Lys
1415						1420					1425			
Lys	Leu	Cys	Ala	Lys	Gly	Lys	Trp	Ile	Leu	Lys	Ile	Leu	Gln	Leu
1430						1435					1440			

Tyr	Glu	Thr	Ser	Leu	Val	Arg	His	Gly	Phe	Met	Leu	Val	Gly	Asn
1445						1450					1455			
Thr	Leu	Thr	Gly	Lys	Thr	Glu	Ile	Leu	Asn	Ile	Leu	Thr	Ser	Ala
1460						1465					1470			
Leu	Thr	Asn	Ile	Gly	Ser	Val	Thr	Lys	Ile	Ile	Thr	Leu	Asn	Pro
1475						1480					1485			
Lys	Ala	Ile	Thr	Ser	Glu	His	Met	Tyr	Gly	Val	Lys	Asp	Asn	Leu
1490						1495					1500			
Ser	Glu	Glu	Trp	Thr	Pro	Gly	Ile	Phe	Ala	Asn	Ile	Trp	Glu	Lys
1505						1510					1515			
Tyr	Asn	Asn	Asn	Asn	Leu	Lys	Tyr	Asn	Thr	Trp	Ile	Val	Cys	Asp
1520						1525					1530			
Gly	Pro	Val	Asp	Ala	Ile	Trp	Ile	Glu	Asn	Leu	Asn	Thr	Val	Leu
1535						1540					1545			
Asp	Asp	Asn	Lys	Ile	Leu	Thr	Leu	Ala	Asn	Asn	Asp	Arg	Ile	Pro
1550						1555					1560			
Met	Thr	Asp	Asn	Thr	Lys	Ile	Ala	Phe	Glu	Val	Glu	Asn	Leu	Asn
1565						1570					1575			
Asn	Ala	Ser	Pro	Ala	Thr	Val	Ser	Arg	Ala	Gly	Ile	Val	Tyr	Ile
1580						1585					1590			
Ser	Asp	Ser	Asp	Leu	Gly	Tyr	Arg	Pro	Phe	Ile	Tyr	Ser	Trp	Leu
1595						1600					1605			
Gln	Lys	Leu	Lys	Asp	Ile	Asn	Thr	Tyr	Gly	Met	Thr	Leu	Tyr	Ala
1610						1615					1620			
Ile	Phe	Asn	Lys	Leu	Phe	Ile	Phe	Tyr	Leu	Asp	Lys	Ile	Gln	Ile
1625						1630					1635			
Leu	Ser	Phe	Leu	Lys	Glu	Asn	Cys	Lys	Phe	Val	Met	Asp	Ile	Thr
1640						1645					1650			
Asp	Ser	Ile	Leu	Ile	Leu	Gln	Thr	Ile	Asn	Leu	Leu	Asn	Ser	Gln
1655						1660					1665			

Ile Ile	Gln Tyr	Ile Asn	Ala	Ile Asn	Asn Phe	Met	Tyr Asn	Glu
1670			1675			1680		
Glu Asp	Leu Asn	Lys Ile	Phe	Phe Leu	Asp Thr	Asn	Glu Lys	Lys
1685			1690			1695		
Leu Leu	Pro His	Ser Gln	Lys	Leu Ile	Lys Ser	Asn	Ile Glu	Glu
1700			1705			1710		
Glu Asn	Asn Ile	Tyr Glu	Gln	Glu Asn	Gly Ile	Pro	Ser Ser	Glu
1715			1720			1725		
Met Lys	Lys Gly	Lys Asp	Gln	Leu Leu	Asn Asp	Glu	Lys Tyr	Lys
1730			1735			1740		
Ser Ser	Asn Lys	Leu Glu	Asp	Thr Lys	Asn Met	Thr	Leu Pro	Asn
1745			1750			1755		
Asp Leu	Gly Lys	Lys Pro	Leu	Phe Pro	Thr Leu	Glu	Lys Lys	Asn
1760			1765			1770		
Asp Lys	Tyr Gly	Lys Asn	Leu	Asp Asn	Ile Lys	Asn	Glu Gln	Lys
1775			1780			1785		
Asp Gln	Asn Asp	Glu Glu	Lys	Asn Lys	Lys Met	Asp	Lys Lys	Glu
1790			1795			1800		
Ala Asp	His Asp	Gln Gln	Gln	Asp Glu	Glu Glu	Lys	Glu Gln	Glu
1805			1810			1815		
Glu Glu	Tyr Asp	Asp Asp	Thr	Lys Leu	Asp Gly	Ile	Asn Asn	Tyr
1820			1825			1830		
Thr Leu	Ser Ser	Gly Thr	Lys	Tyr Glu	Lys Val	Asn	Ile Asp	Glu
1835			1840			1845		
Cys Glu	Glu Ile	Met Leu	Tyr	Ser Ile	Val Trp	Gly	Leu Cys	Gly
1850			1855			1860		
Leu Leu	Glu Tyr	Lys Asp	Arg	Leu Lys	Val His	Asn	Phe Leu	Leu
1865			1870			1875		
Lys Asn	Val Pro	Val Leu	Lys	Asn Val	Met Gly	Val	Asn Lys	Lys
1880			1885			1890		
Leu Tyr	Thr Glu	Glu Asn	Glu	Lys Ile	Lys Gln	Gln	Gln Pro	Lys

1895	1900	1905
Lys Lys Lys Glu Leu Gln Pro 1910 1915	Lys Gly Asp Tyr Asn 1920	Asp Tyr Val
Ser Thr Lys Gln Asn Lys Glu 1925 1930	Glu Asp Lys Asn Asn 1935	Ile Glu Leu
Asp Asn Glu Gln Asn Val Glu 1940 1945	Asp Gly Glu Glu Phe 1950	Glu Asn Glu
Ile Ser Leu Ile Tyr Asp Phe 1955 1960	Tyr Phe Asp Met Lys 1965	Leu Lys Lys
Leu Val Lys Trp Asn Val Gly 1970 1975	Pro Phe Lys Met Pro 1980	Arg Asn Ile
Asn Ser Ile Ser Ser Ile Leu 1985 1990	Ile Pro Thr Ile Glu 1995	Thr Thr Lys
Val Glu His Ile Ile Lys Leu 2000 2005	Ile Ser Asn Ile Pro 2010	Ile Arg Cys
Tyr Asn Phe His Thr Tyr Lys 2015 2020	Ser Thr Leu Leu Leu 2025	Gly Ser Thr
Gly Ser Ala Lys Thr Ser Ile 2030 2035	Ala Leu Leu Tyr Thr 2040	Ser Lys Gln
Glu Lys Asn Thr Lys Arg Phe 2045 2050	Asn Phe Ser Ser Val 2055	Thr Thr Pro
Glu Lys Phe Gln Leu Phe Ile 2060 2065	Glu Ser Glu Leu Glu 2070	Arg Lys Thr
Gly Lys Thr Tyr Gly Pro Ile 2075 2080	Gly Asn Thr Lys Ser 2085	Ile Ile Phe
Ile Asp Asp Met Ser Met Pro 2090 2095	Lys Ile Asn Glu Trp 2100	Gly Asp Gln
Ser Thr Leu Glu Leu Leu Arg 2105 2110	Gln Leu Ile Glu Phe 2115	Gln Gly Phe
Tyr Phe Leu Asp Lys Asp Lys 2120 2125	Arg Gly Asn Phe Lys 2130	Lys Ile Ile

Asp	Leu	Glu	Tyr	Ile	Gly	Cys	Ile	Asn	His	Pro	Gly	Cys	Gly	Asn
2135						2140					2145			
Asn	Asp	Ile	Pro	Lys	Arg	Leu	Lys	Ser	Lys	Trp	Phe	Asn	Val	Asn
2150						2155					2160			
Ile	Leu	Pro	Tyr	Asn	Leu	Asn	Ser	Ile	Asn	Thr	Ile	Tyr	Gly	Thr
2165						2170					2175			
Val	Leu	Arg	Thr	Lys	Phe	Asn	Lys	Lys	Gln	Asn	Phe	Ser	Asp	Glu
2180						2185					2190			
Ile	Ile	Glu	Asn	Ile	Asp	Lys	Val	Ile	Leu	Cys	Thr	Ile	Asn	Leu
2195						2200					2205			
Phe	Gly	Arg	Leu	Lys	Lys	His	Leu	Leu	Pro	Val	Pro	Ser	Arg	Phe
2210						2215					2220			
His	Tyr	Leu	Tyr	Thr	Thr	Arg	Asp	Leu	Ala	Lys	Ile	Phe	Tyr	Ser
2225						2230					2235			
Met	Leu	Leu	Cys	Pro	Tyr	Glu	Ser	Ile	Asp	Asn	Asn	Leu	Tyr	Asn
2240						2245					2250			
Phe	Leu	Cys	Leu	Trp	Lys	His	Glu	Cys	Glu	Arg	Val	Leu	Ile	Asp
2255						2260					2265			
Lys	Leu	Ser	Arg	Met	Glu	Asp	Lys	Thr	Phe	Ser	Leu	Asp	Gln	Leu
2270						2275					2280			
Lys	Gln	Ile	Phe	Asn	Gln	Tyr	Tyr	Pro	Ser	Tyr	Lys	Asp	Ile	Cys
2285						2290					2295			
Glu	Lys	Asn	Ile	Tyr	Phe	Ser	Tyr	Phe	Tyr	Val	Ser	Glu	Lys	Glu
2300						2305					2310			
Gln	Gln	Leu	Tyr	Met	Ile	Glu	Asn	Asp	Leu	Ile	Glu	Asn	Asn	Thr
2315						2320					2325			
Thr	Gln	Glu	Lys	Thr	Glu	Asn	Asn	Lys	Ile	Asn	Ile	Thr	Ile	Ser
2330						2335					2340			
Pro	Ser	Tyr	Ile	Asn	Asp	Thr	Ser	Asn	Asn	Leu	Ile	Ser	Thr	Lys
2345						2350					2355			

Leu	Asp	Asn	Thr	Asn	Glu	Leu	Asn	Glu	Lys	Ile	Asp	Asp	Thr	Lys
2360						2365					2370			
Thr	Arg	Ser	Asn	Ser	Ala	Leu	Tyr	Arg	Arg	Asn	Asp	Val	Asp	Asn
2375						2380					2385			
Gln	Asn	Ile	Ile	Asn	Asn	Asn	Asn	Ile	Leu	Thr	Lys	Glu	Gly	Asp
2390						2395					2400			
Asn	Asn	Gly	Asp	Ile	Asp	Asn	Ile	Asn	Thr	Phe	Ser	Phe	Ser	Trp
2405						2410					2415			
Met	Lys	Lys	Asp	Tyr	Lys	Ile	Val	Val	Asp	Phe	Glu	Arg	Leu	Arg
2420						2425					2430			
Tyr	Ile	Val	Tyr	Glu	Tyr	Met	Lys	Glu	Tyr	Asn	Ile	Asn	Asn	Val
2435						2440					2445			
Lys	Lys	Leu	Asp	Leu	Val	Phe	Phe	Asp	Asp	Ser	Leu	Lys	His	Leu
2450						2455					2460			
Ile	Ile	Ile	Asn	Arg	Val	Met	Gln	Thr	Pro	Asn	Gly	Ser	Cys	Met
2465						2470					2475			
Leu	Val	Gly	Val	Gly	Gly	Ser	Gly	Lys	Arg	Ser	Leu	Thr	Lys	Leu
2480						2485					2490			
Ser	Val	Phe	Ile	Ser	Glu	Gln	Val	Leu	Phe	Gln	Leu	Asn	Ile	Thr
2495						2500					2505			
Lys	Thr	Tyr	Thr	Lys	Asn	Leu	Phe	Phe	Glu	Asp	Leu	Lys	Ser	Leu
2510						2515					2520			
Tyr	Ile	Ser	Ala	Gly	Gln	Met	Asn	Lys	Lys	Thr	Thr	Phe	Leu	Leu
2525						2530					2535			
Ser	Asp	Ser	Asp	Ile	Glu	Lys	Asn	Asp	Phe	Ile	Leu	Glu	His	Val
2540						2545					2550			
Asn	Ser	Ile	Leu	Ser	Thr	Gly	Leu	Val	Tyr	Gly	Leu	Phe	Ile	Lys
2555						2560					2565			
Asp	Glu	Lys	Glu	Ala	Ile	Cys	Ala	Glu	Met	Lys	Glu	Ser	Tyr	Leu
2570						2575					2580			

Lys Glu Met Asn Lys Ser Asn Gln Ser Ser Lys Ile Lys Gly Gly
 2585 2590 2595

 Lys Lys Lys Lys Asn Lys Asn Asp Tyr Asn Asn Ile Asp Asp Met
 2600 2605 2610

 Asp Met Asp Glu Phe His Ser Lys Asp Ser Gln Ser Lys Ser Asp
 2615 2620 2625

 Ala Ser Ser Thr Ser Ser Ile Asp Asn Asp Ser Ile Ser Asn Glu
 2630 2635 2640

 Asn Ile Thr Asn Lys Lys Lys Lys Lys Asp Glu Lys Val Ile Asn
 2645 2650 2655

 Asp Phe Asn Val Ser Ser Asn Val Ile Phe Asp Tyr Leu Leu Asp
 2660 2665 2670

 Asn Val Arg Asn Asn Leu His Ile Phe Leu Cys Phe Ser Pro Ile
 2675 2680 2685

 His Lys Glu Phe Ala Leu Arg Tyr Gln Gln Phe Pro Cys Ile Tyr
 2690 2695 2700

 Asn Cys Val Thr Ile Asn Trp Phe Leu Lys Trp Pro Leu Glu Ala
 2705 2710 2715

 Leu Val Asn Val Ser Thr Ala Tyr Leu Asn Asn Phe Asn Ile Asp
 2720 2725 2730

 Ile Glu Asp Asn Leu Lys Asp Asp Phe Phe Asn Leu Phe Ala Ile
 2735 2740 2745

 Val His Asn Lys Val Ser Asp Thr Cys Asp Thr Tyr Lys Glu Arg
 2750 2755 2760

 Met Arg Arg Asn Thr Tyr Val Thr Pro Lys Ser Tyr Leu Ser Phe
 2765 2770 2775

 Ile Asp Leu Tyr Lys Gln Met Tyr Val Lys Lys Tyr Asp Glu Ile
 2780 2785 2790

 Lys Cys Leu Lys Glu Ser Val Asp Ile Gly Leu Lys Lys Leu Asn
 2795 2800 2805

 Glu Ala Ala Met Asp Val Gln Lys Met Arg Glu Ser Leu Thr Ser

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Glu Glu Glu Lys Leu Lys Glu Ser Asp Glu Gln Met Asn Ile Leu	2830	2835
2825		
Leu Glu Lys Val Lys Asp Glu Ser Leu Lys Ala Glu Lys Gln Ser	2845	2850
2840		
Val Glu Val Ser Lys Phe Arg Asp Lys Cys Ile Lys Glu Lys Asp	2860	2865
2855		
Leu Ile Leu Lys Asp Gln Glu Glu Ala Asp Lys Asp Leu Lys Ala	2875	2880
2870		
Ala Leu Pro Tyr Leu His Glu Ala Glu Glu Ala Ile Lys Ser Ile	2890	2895
2885		
Thr Gly Lys Asp Ile Thr Glu Leu Lys Ser Met Lys Thr Pro Ser	2905	2910
2900		
Asp Ile Ile Arg Ile Val Phe Asp Gly Val Leu Ile Leu Leu Gln	2920	2925
2915		
Gly Lys Leu Lys Glu Pro Lys Ile Asp Val Lys Tyr Val Asn Lys	2935	2940
2930		
Gln His Ile Asp Phe Ile Gln Asp Ser Phe Asp Glu Tyr Ala Lys	2950	2955
2945		
Pro Leu Met Ala Asp Ile Arg Phe Leu Asn Leu Leu Phe Asp Phe	2965	2970
2960		
Ser Lys Asn Glu Lys Asp Asn Ile Asn Glu Glu Thr Ile Glu Leu	2980	2985
2975		
Leu Lys Pro Tyr Ile Gln Ser Thr Phe Phe Lys Thr Gln Ile Ala	2995	3000
2990		
Lys Lys Ala Ser Val Ala Ala Glu Gly Leu Cys Lys Trp Val Gly	3010	3015
3005		
Ala Met Ala Met Tyr Asn Gln Ala Ser Lys Ile Val Lys Pro Lys	3025	3030
3020		
Met Ser Tyr Leu Lys Ile Gln Thr Gly Arg Leu Glu Asp Ala Leu	3040	3045
3035		

Lys	Gln	Leu	Ala	Glu	Ala	Glu	Asp	Ser	Leu	Leu	Lys	Ala	Gln	Leu
3050						3055					3060			
Phe	Val	Glu	Asn	Leu	Asn	Leu	Asp	Ile	Glu	Asn	Met	Phe	Lys	Lys
3065						3070					3075			
Lys	Lys	Ala	Leu	Glu	Glu	Thr	Ala	Leu	Lys	Thr	Lys	Gln	Arg	Ile
3080						3085					3090			
Glu	Gln	Ala	Asn	Lys	Leu	Ile	Asn	Gly	Leu	Ser	Ser	Glu	Lys	Asp
3095						3100					3105			
Arg	Trp	Thr	Asp	Asp	Ser	Asn	Asn	Phe	Ser	Asn	Ile	Lys	Lys	Lys
3110						3115					3120			
Ile	Val	Gly	Asp	Val	Phe	Ile	Cys	Ser	Ser	Phe	Ile	Thr	Tyr	Cys
3125						3130					3135			
Gly	Met	Phe	Asn	Thr	Glu	Phe	Arg	Asn	Tyr	Leu	Met	Asn	Asp	Val
3140						3145					3150			
Phe	Tyr	Asn	Tyr	Thr	Lys	Asn	Ile	Lys	Asn	Ile	Pro	Val	Ser	Ser
3155						3160					3165			
Asn	Ile	Asp	Ile	Ile	Lys	Tyr	Val	Leu	Ser	Ser	Asp	Asp	Thr	Lys
3170						3175					3180			
Ile	Cys	Asp	Trp	Ser	Val	Gln	Lys	Leu	Pro	Asn	Asp	Lys	Leu	Ser
3185						3190					3195			
Ile	Glu	Asn	Ala	Leu	Ile	Cys	Glu	Asn	Ser	Asn	Lys	Tyr	Val	Leu
3200						3205					3210			
Leu	Ile	Asp	Pro	Gln	Cys	Gln	Ala	Ser	Asn	Trp	Ile	Lys	Asn	Lys
3215						3220					3225			
Glu	Phe	Gln	Asn	Asp	Leu	Ser	Asn	Gln	Arg	Cys	Ile	Thr	Thr	Phe
3230						3235					3240			
Asn	Ser	Thr	Lys	Phe	Lys	Asp	Asn	Leu	Glu	Tyr	Cys	Leu	Ser	Glu
3245						3250					3255			
Gly	Lys	Thr	Leu	Leu	Ile	Glu	Asn	Val	Glu	Glu	Tyr	Ile	Asp	Pro
3260						3265					3270			

Ile	Leu	Asp	Ser	Val	Leu	Glu	Lys	Gln	Ile	Ile	Lys	Lys	Gly	Lys
3275						3280					3285			
Lys	Asn	Tyr	Ile	Leu	Ile	Glu	Asn	Asn	Leu	Ile	Asn	Phe	Asp	Glu
3290						3295					3300			
Lys	Phe	Asn	Leu	Phe	Met	Thr	Thr	Asn	Ile	Pro	Asn	Pro	Asn	Tyr
3305						3310					3315			
Ser	Pro	Glu	Ile	Tyr	Ala	Arg	Cys	Cys	Val	Ile	Asp	Phe	Thr	Val
3320						3325					3330			
Thr	Val	Lys	Gly	Leu	Glu	Asp	Gln	Leu	Leu	Gly	Arg	Val	Leu	Thr
3335						3340					3345			
Glu	Glu	Gln	Lys	His	Leu	Glu	Ile	Thr	Leu	Lys	Asn	Ile	Met	Ile
3350						3355					3360			
Glu	Leu	Lys	Asp	Asn	Thr	Lys	Ser	Leu	Gln	Asp	Leu	Asp	Lys	Gln
3365						3370					3375			
Leu	Leu	Tyr	Lys	Leu	Asn	Thr	Ser	Ser	Ser	Asn	Leu	Ile	Glu	Asp
3380						3385					3390			
Glu	Glu	Leu	Ile	Glu	Val	Leu	Asn	Asn	Thr	Lys	Leu	Leu	Ser	Lys
3395						3400					3405			
Glu	Leu	Glu	Ser	Lys	Leu	Lys	Asp	Ser	Asn	Glu	Lys	Lys	Lys	Glu
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Ile	Asn	Glu	Lys	Arg	Glu	Gln	Tyr	Arg	Ser	Val	Ala	Leu	Arg	Gly
3425						3430					3435			
Ser	Ile	Leu	Tyr	Phe	Cys	Ile	Val	Asp	Ile	Thr	Asn	Val	Asn	Tyr
3440						3445					3450			
Ile	Tyr	Asn	Thr	Ser	Leu	His	Gln	Phe	Leu	Glu	Gln	Phe	Asp	Leu
3455						3460					3465			
Ser	Ile	Lys	Lys	Ala	Glu	Lys	Gly	Gln	His	Ile	Lys	Lys	Arg	Val
3470						3475					3480			
Glu	Ser	Ile	Leu	Tyr	Thr	Leu	Thr	Asn	Leu	Ile	Ile	Ser	Tyr	Met
3485						3490					3495			

Glu	Arg	Cys	Leu	Phe	Asp	His	His	Lys	Ile	Ile	Phe	Lys	Leu	Leu
3500						3505					3510			
Ile	Ser	Leu	Lys	Ile	Leu	Leu	Tyr	Asp	Asn	Ile	Ile	Ser	Asn	Lys
3515						3520					3525			
Asp	Ile	Ser	Phe	Phe	Leu	Asn	Pro	Leu	Ser	His	Tyr	Ser	Pro	Ser
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Asn	Asp	Met	Asn	Asn	Glu	Met	Thr	Asn	Thr	Asn	Met	Leu	Asn	Asp
3545						3550					3555			
Pro	Met	Gly	Val	Leu	Lys	Asn	Lys	Lys	Asn	Lys	Lys	Asn	Asn	Lys
3560						3565					3570			
Glu	Met	Ile	Asn	Asn	Asn	Asn	Asn	Met	Ser	Ile	Ala	Ile	Asn	Ala
3575						3580					3585			
Val	Ile	Asn	Asn	Thr	Met	Asp	Ser	Ser	Ser	Met	Asn	Asn	Asp	Thr
3590						3595					3600			
Met	Asn	Val	Tyr	Leu	Gly	Thr	Asn	Glu	Asn	Asp	Lys	Asn	Lys	Lys
3605						3610					3615			
Asp	Thr	Asn	Thr	Ser	Asp	Val	Met	Ser	Ser	Ser	Ser	Ser	Thr	Lys
3620						3625					3630			
Thr	Gly	Ser	Arg	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr
3635						3640					3645			
Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Met	Asp	Gly	Asn
3650						3655					3660			
Ser	Ser	Asn	Asn	Ala	Gly	Asp	Ile	Asn	Ser	Cys	Lys	Asn	Asn	Thr
3665						3670					3675			
Ser	Val	Thr	Asp	His	Asn	Ile	Ser	Asn	Lys	Asn	Lys	Ile	Asp	Leu
3680						3685					3690			
His	Lys	Lys	Gly	Ala	Gly	Lys	Gly	Lys	Ile	Ser	Ser	Thr	Lys	Trp
3695						3700					3705			
Leu	Phe	Lys	Asn	Glu	Lys	Leu	Tyr	Lys	Asn	Ile	Ile	Ser	Leu	Ser
3710						3715					3720			

Asn	His	Ser	Phe	Gly	Asn	Asp	Lys	Asn	Asn	Arg	Phe	Phe	Tyr	Asp
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Ile	Leu	Asn	Val	Ile	Gln	Leu	Asn	Glu	Asn	Thr	Trp	Lys	Asn	Tyr
3740						3745					3750			
Tyr	Asp	Ile	Leu	Asp	Ile	Glu	Asn	Lys	Asn	Ile	Pro	Tyr	Tyr	Asn
3755						3760					3765			
Glu	Arg	Leu	Asp	Val	Asn	Ser	Gln	Ile	Ser	Ser	Phe	Ile	Lys	Leu
3770						3775					3780			
Cys	Leu	Ile	Arg	Cys	Leu	Arg	Glu	Asp	Arg	Thr	Ile	Leu	Cys	Ala
3785						3790					3795			
Asn	Lys	Phe	Val	Asp	Glu	Val	Leu	Asn	Arg	Asn	Ser	Asp	Thr	Ile
3800						3805					3810			
Lys	His	Glu	Thr	Leu	Glu	Asn	Ile	Phe	Ser	Glu	Ser	Ser	Asn	Arg
3815						3820					3825			
Lys	Pro	Phe	Leu	Phe	Leu	Leu	Ser	Leu	Ala	Ser	Asp	Pro	Thr	Asn
3830						3835					3840			
Met	Ile	Asp	Asp	Phe	Ala	Lys	Lys	Phe	Lys	Lys	Tyr	Pro	Thr	Asp
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Lys	Ile	Ser	Met	Gly	Glu	Gly	Gln	Glu	Val	Ile	Ala	Lys	Glu	Lys
3860						3865					3870			
Leu	Lys	Asn	Gly	Ile	Ile	Ser	Gly	Asn	Trp	Leu	Ile	Leu	Gln	Asn
3875						3880					3885			
Cys	His	Leu	Asn	Lys	Asn	Phe	Ile	Ile	Asp	Val	Tyr	Asn	Met	Leu
3890						3895					3900			
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Ser	Glu	Pro	Asp	Asp	Glu	Phe	Pro	Ile	Cys	Ile	Leu	His	Gly	Ser
3920						3925					3930			
Ile	Lys	Ile	Ser	Thr	Ser	Leu	Ser	Ser	Gly	Ile	Lys	Asn	Asn	Met
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Arg	Lys	Ile	Tyr	Lys	Asp	Ile	Ile	Lys	Glu	Asp	Ile	Leu	Glu	Lys

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Ile Asp Asp Asp Lys Tyr Arg	Lys Ile Ile Tyr Ser	Leu Ser Tyr		
3965	3970	3975		
Leu His Cys Val Leu Cys Glu	Arg Lys Lys Phe Gly	Pro Leu Gly		
3980	3985	3990		
Trp Cys Val Pro Tyr Glu Phe	Ser Ile Thr Asp Leu	Phe Ala Ser		
3995	4000	4005		
Tyr Leu Phe Ile Glu Lys His	Leu Tyr Ser Thr Leu	Leu Val Asn		
4010	4015	4020		
Arg Pro Ile Asp Trp Glu Ser	Ile His Tyr Met Leu	Ala Glu Val		
4025	4030	4035		
Gln Tyr Gly Gly Lys Val Thr	Asp Asp Leu Asp Arg	Glu Leu Leu		
4040	4045	4050		
Leu Thr Tyr Val Gln Tyr Tyr	Phe Asn Glu Asp Leu	Phe Arg Met		
4055	4060	4065		
Lys Ser Glu Gly Ser Ser Glu	Tyr Leu Asn Leu Pro	Lys Phe Tyr		
4070	4075	4080		
Glu Ile Thr Asn Phe Lys Asn	Phe Ile Glu Lys Ile	Pro Asn Ile		
4085	4090	4095		
Asp Thr Pro Ser Val Leu Asp	Leu His Asn Asn Ala	Glu Ile Thr		
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Tyr Arg Val Asn Glu Ser Arg	Gln Val Leu Asn Ser	Ile Leu Glu		
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Ile Gln Pro Arg Asp Val Asp	Gln Gly Glu Glu Lys	Ser Met Glu		
4130	4135	4140		
Thr Val Val Gln Glu Met Cys	Leu Gly Ile Leu Gln	Asn Leu Pro		
4145	4150	4155		
Thr Asp Ile Asn Leu Glu Asp	Val Lys Lys Ile Leu	Tyr Arg Lys		
4160	4165	4170		
Asn Lys Asn Ile Gln Pro Asn	Met Gln Thr Asn Thr	Gln Leu Asn		
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Val	Thr	Cys	Asn	Leu	Gly	Ala	Thr	Thr	Lys	Asn	Phe	Gly	Ile	Leu
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Glu	Asn	Ser	Ser	Tyr	Lys	Gly	Lys	Asn	Arg	Asp	Tyr	Asn	Ile	Asp
4205						4210					4215			
Thr	Asn	Asp	Asn	Val	Asn	Asn	Asn	Ile	Leu	Gln	Lys	Ser	Val	Met
4220						4225					4230			
Leu	Asn	Asn	Pro	Asn	Asn	Tyr	Thr	Ala	Asn	Val	Gly	Lys	Tyr	Ile
4235						4240					4245			
Ile	Pro	Gly	Asp	Asn	Lys	Asn	Lys	Asn	Leu	Gly	Leu	Val	Lys	Glu
4250						4255					4260			
Asn	Glu	Leu	Ser	Leu	Asp	Ile	Pro	Asp	Ile	Ala	Tyr	Trp	Glu	Asn
4265						4270					4275			
Asp	Asn	Glu	Gly	Glu	Lys	Asn	Val	Gln	Tyr	Asn	Phe	Ser	Pro	Leu
4280						4285					4290			
Gln	Val	Phe	Phe	Leu	Gln	Glu	Met	Glu	Arg	Ile	Lys	Lys	Val	Ile
4295						4300					4305			
Asp	Leu	Val	Lys	Val	Asn	Leu	Asn	Asp	Ile	Ile	Ser	Ala	Ile	Asp
4310						4315					4320			
Gly	Ser	Lys	Ile	Met	Thr	Ala	Asp	Leu	Gln	Asn	Asp	Thr	Lys	Tyr
4325						4330					4335			
Ile	Phe	Ser	Gln	Ser	Val	Pro	Lys	Lys	Trp	Ile	Tyr	Asp	Ala	Ser
4340						4345					4350			
Glu	Thr	Glu	Ile	Ser	Trp	Ile	Cys	Asn	Asn	Leu	Asn	Gln	Trp	Leu
4355						4360					4365			
Asn	Ile	Leu	Asn	Leu	Arg	Tyr	Glu	Gln	Ile	Met	Asn	Tyr	Ile	Tyr
4370						4375					4380			
Asn	Gly	Lys	Leu	Lys	Ser	Tyr	Trp	Leu	Pro	Gly	Phe	Phe	Asn	Pro
4385						4390					4395			
Gln	Gly	Phe	Leu	Thr	Ser	Met	Lys	Gln	Glu	Ile	Thr	Arg	Leu	Asn
4400						4405					4410			

Lys Lys Asp Gln Leu Ser Leu Asp Glu Val Val Leu Tyr Thr Asp
 4415 4420 4425

Ile Lys Asn Tyr Asp Val Glu Lys Ile Lys Glu Phe Pro Glu His
 4430 4435 4440

Gly Phe Asn Ile His Gly Leu Phe Ile Glu Gly Ser Lys Trp Asn
 4445 4450 4455

Trp Gln Glu Gly Lys Leu Glu Glu Ser Ser Pro Lys Ile Leu Cys
 4460 4465 4470

Glu Asn Met Pro Val Ile His Ile Thr Val Val Ser Asn Lys Asp
 4475 4480 4485

Lys Lys Ile Lys Phe Ile Glu Asn Asn Lys His Met Phe Tyr Asn
 4490 4495 4500

Cys Pro Val Tyr Lys Tyr Asn Val Arg Thr Asp Lys Tyr Phe Ile
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Phe Arg Ile His Leu Lys Ser Asp Ile Asp Pro Ser Ile Trp Lys
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Leu Arg Gly Thr Ser Leu Leu Cys Ser Lys Asp
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 1 5 10 15

Leu Leu Thr Leu Val Phe Gln Lys Tyr Ser Ser Cys Gln Asn Ser Leu
 20 25 30

Asn Tyr Ser Lys Asn Asn Tyr Gly Leu Asn Asp Gln Glu Leu Arg Ala
 35 40 45

Met Leu Phe Gly Leu Asn Tyr Asp Pro Ser Lys Arg Asn Lys Asn Asn
 50 55 60

Lys Val Asn Arg Asp Val Ile Lys Asn Glu Ser Ser Leu Leu Leu Arg

65		70		75		80									
Asn	Leu	Ile	Asn	Glu	Glu	Thr	Leu	Ser	Glu	Lys	Asn	Asp	Lys	Val	Val
			85						90					95	
Asn	Asp	Ile	Lys	Asn	Met	Asn	Asn	Ser	Thr	Glu	Lys	Lys	Ile	Asn	Ser
			100					105					110		
Ile	Ser	Lys	Gly	Asn	Asn	Asn	Ile	His	Asn	Ile	Asn	Glu	Asn	Gln	Asn
		115					120					125			
Ala	Asn	Val	Glu	Leu	Lys	Thr	Asp	Asn	Ile	Leu	Asp	Asn	Thr	Ser	Glu
	130					135					140				
Gln	Asp	Asp	Ile	Asn	Glu	Lys	Asn	Asn	Asp	Asn	Gly	Asp	Met	Val	His
145					150					155					160
Lys	Asn	Ile	Tyr	Asn	Asn	Ile	Leu	Ser	Asp	Pro	Tyr	Asp	Ile	Asn	Ser
				165					170					175	
Thr	Asn	Ala	Tyr	Ile	Asn	Lys	Ser	Asp	Ile	Thr	Asn	Leu	Asn	Tyr	Ser
				180				185					190		
Ser	Asn	Asp	Val	Ile	Asn	Asn	Asp	Lys	Val	Asn	Lys	Ser	Tyr	Glu	Glu
		195					200					205			
Lys	Asn	Ile	Val	Asn	Asn	Thr	Glu	Leu	Asn	Lys	Leu	Ile	Glu	Ser	Asp
	210					215					220				
Asp	His	Ser	Asn	Lys	Asn	Asp	Ile	Asn	Lys	Lys	Thr	Glu	Lys	Asn	Lys
225					230					235					240
Thr	Phe	Asn	Ser	Ser	Ser	Thr	Ser	Asp	Glu	Lys	Lys	Gln	Thr	Asp	Ile
				245					250					255	
Lys	Gly	Gln	Asn	Lys	Asn	Asp	Leu	Asn	Asn	Glu	His	Ile	Phe	Asn	Asn
			260					265					270		
Asn	Asp	Ile	Asn	Asn	Asn	Val	Gln	Tyr	Lys	Asn	Lys	Val	Asn	Ile	Ile
		275					280					285			
Ser	Val	Asp	Lys	Asn	Asn	Thr	Asp	Arg	Asp	Asn	Asn	Asn	Leu	Tyr	Glu
	290					295					300				
Thr	Asn	Asn	Gly	Asp	Leu	Lys	Tyr	Asn	Asn	Asp	Leu	Ile	Lys	Glu	Gly

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Glu Asn Lys Arg Asn Asn Lys Leu Asn Asn Tyr Lys Phe Asn Met Asn						
		325		330		335
Lys Val Asn Asp Asn Lys Asn Phe Asn Lys Tyr Thr Glu Ile Tyr Asn						
		340		345		350
Lys Glu Ser Glu Pro Glu Lys Gln Asn Asn Ser Asn Asn Asn Leu Gly						
		355		360		365
Ile Pro Thr Leu Ile Lys Lys Glu Val His Ile Lys Asn His Asn Thr						
		370		375		380
Phe Ser Ser Asn Gly Lys Ile Leu Glu Asn Lys Asp Ile Asp Lys Met						
		385		390		395
Ser Asp Thr Ser Lys Lys Asn Asp Arg Asn Phe Arg Ser Asn Asp Ile						
		405		410		415
Lys Asn Phe Lys Asn Asn Asp Thr Lys Asn Asn Ala Thr Leu Ser Glu						
		420		425		430
Asp Asn Lys Asn Arg Tyr Asn Ile Thr Thr Asn Lys Asn Asn Glu Lys						
		435		440		445
Lys Glu Tyr Asn Met Lys Lys Ser Asn Glu Asn Glu Tyr Ala Phe Asn						
		450		455		460
Thr Glu Lys Thr Asn Val Asn Asn Asp Ala Leu Lys Glu Glu Arg Asn						
		465		470		475
Asn Tyr Lys Tyr Leu Asn Asn Gln Thr Asp Val Asn Ile Asn Asn Leu						
		485		490		495
Gln Glu Arg Asp Ile Asn Leu Tyr Asn Lys Asn Glu Ser Asp Lys Lys						
		500		505		510
Leu Glu Gln Ser Phe Arg Glu Glu Asp Ile Lys Asn Ala Tyr Leu Pro						
		515		520		525
Glu Asn Lys Asn Phe Gln Lys Thr Leu Thr Asn Asn Glu Lys Asn Glu						
		530		535		540
Asp Asn Lys Ile Pro His Ile Asp Pro Ser Asn Asn Glu Leu Asp Lys						
		545		550		555
						560

Lys Gly Asn Tyr Asn Lys Tyr Glu Ile Gly Lys Ile Lys Lys Asn Asn
565 570 575

Glu Glu Asn Lys Gln Asn Val Thr Val Glu Glu Asn Ile Asn Pro Glu
580 585 590

Lys Ile Arg Lys Asp His Glu Gln Asn Ile Gln Tyr Ser Lys Asn Asp
595 600 605

Pro Ile Thr Asp Ile Gln Asn Ser Thr Asn Ala Val Leu Lys Lys Ile
610 615 620

Lys Pro Thr Glu Phe Glu Asn Tyr Thr Lys Glu Glu Leu Gln Asn Val
625 630 635 640

Ser Ser Ser Glu Val Arg Asp Asp Asn Leu Asn Glu Ile Asn Arg Lys
645 650 655

Gly Glu Thr Asn Met Phe Ser Glu Lys Ser Thr Leu Lys Lys Gly Glu
660 665 670

Asn Asp Trp Asn Glu Tyr Glu Tyr Phe Lys Leu Lys Ser Asn Glu Leu
675 680 685

Lys Val Leu Gly Ile Ile Asn Lys Tyr Ser Pro Lys Gly Gly Phe Ser
690 695 700

Ile Ser Val Asn Cys Gly Gly Tyr Asp Asp Phe Arg Glu Ile Pro Gly
705 710 715 720

Ile Ser Asn Leu Leu Arg His Ala Ile Phe Tyr Lys Ser Glu Lys Arg
725 730 735

Ile Thr Thr Leu Leu Ser Glu Leu Gly Lys Tyr Ser Ser Glu Asn Asn
740 745 750

Ser Arg Ile Gly Glu Ser Phe Thr Thr Tyr Tyr Ala Ile Gly Lys Ser
755 760 765

Glu Asn Ile Tyr Asn Ile Leu Thr Leu Phe Ser Gln Asn Leu Phe Tyr
770 775 780

Pro Leu Phe Asp Glu Asp Phe Ile Glu Asn Glu Val Arg Glu Ile Asn
785 790 795 800

Asn Lys Tyr Ile Ser Met Glu Asn Asn Ser Leu Asn Cys Leu Lys Ile
 805 810 815

Ile Ser Gln Phe Ile Thr Asp Leu Lys Tyr Ser Lys Phe Phe Phe His
 820 825 830

Gly Asn Tyr Ile Thr Leu Cys Asn Asn Val Leu Lys Asn Gly Leu Asn
 835 840 845

Ile Lys Lys Leu Leu Tyr Asn Phe His Lys Lys Cys Tyr Gln Pro Lys
 850 855 860

Asn Met Ala Leu Thr Ile Leu Leu Gly Lys Lys Gly Asn Ser His Asp
 865 870 875 880

Asn Tyr Asn Met Asn Asp Ile Glu Asn Phe Val Ile Asp Ile Phe Glu
 885 890 895

Lys Ile Lys Asn Tyr Asp Tyr Val Asn Glu Ser Asn Asn Lys Arg Gln
 900 905 910

Lys Glu Lys His Ile Val Asn Phe Lys Asp Asp Thr Phe Asn Ile Glu
 915 920 925

Lys Lys Ser Asn Tyr Lys Asp Ser Arg Leu Val His Asn Val Thr Gln
 930 935 940

Asn Asn Ser Lys Asp Lys Glu Glu Lys Ile Lys Phe Ile Glu His Ile
 945 950 955 960

Asn Glu Phe Asn Asn Tyr Val Leu Asp Leu Asn Gln Lys Gly Arg Tyr
 965 970 975

Ile Glu Val Leu Lys Lys Glu Gly Trp Arg Asp Gln Ile Tyr Leu Tyr
 980 985 990

Trp Ser Ser Lys Ile Ser Ile Asp Leu Tyr Lys Lys Ile Glu Glu Tyr
 995 1000 1005

Gly Ser Ile Thr Phe Ile His Asp Ile Leu Leu Asp Leu Arg Lys
 1010 1015 1020

Asn Gly Leu Tyr Asp Lys Ile Cys Val Glu Asn Gln Tyr Ala Tyr
 1025 1030 1035

Asp	Leu	Lys	Ile	Ile	Ser	Ser	Cys	Asn	Lys	Tyr	Tyr	Val	Asn	Tyr
1040						1045					1050			
Gly	Ile	Leu	Met	Asn	Leu	Thr	Lys	Lys	Gly	Lys	Lys	Asp	Leu	Arg
1055						1060					1065			
His	Leu	Met	His	Ile	Ile	Asn	Val	Phe	Ile	Lys	Glu	Ile	Ser	Lys
1070						1075					1080			
Leu	Phe	Asp	His	Asp	Ser	Leu	Asn	Lys	Gly	Ile	Asn	Lys	Tyr	Ile
1085						1090					1095			
Leu	Asp	Tyr	Tyr	Arg	Glu	Lys	Ala	Leu	Ile	Thr	Asp	Val	Asn	Tyr
1100						1105					1110			
Asn	Asn	Asp	Asn	Lys	Tyr	Ile	Glu	Leu	Asn	Asp	Leu	Ile	Asn	Tyr
1115						1120					1125			
Ser	Asn	Ile	Leu	Leu	Asp	His	Ser	Asp	Asp	Ser	Ser	Leu	Ile	Leu
1130						1135					1140			
Ser	Ile	Asn	Asn	Leu	Ile	Glu	Asp	Lys	Asn	Lys	Asn	Asp	Phe	Arg
1145						1150					1155			
Asn	His	Ile	Lys	Ile	Thr	Ser	Leu	Leu	Gly	Ser	Leu	Met	Lys	Asn
1160						1165					1170			
Glu	Asn	Thr	Asn	Ile	Ile	Asn	Val	Val	Asp	Thr	Phe	Ser	Ile	Arg
1175						1180					1185			
Asn	Gln	Ser	Lys	Ile	Pro	Tyr	Ser	Asn	Val	Thr	Tyr	Val	Ile	Gly
1190						1195					1200			
Glu	Asn	Pro	Tyr	Met	Val	Asn	Glu	Gly	Asn	Ile	Val	Asn	Asp	Ile
1205						1210					1215			
Asn	Leu	Ile	Leu	Pro	Glu	Ile	Lys	Ile	Cys	Pro	Phe	Asn	Ser	Leu
1220						1225					1230			
Val	Asn	Asn	Lys	Ile	Leu	Phe	Asn	Glu	Lys	Ser	Phe	Phe	Cys	Val
1235						1240					1245			
Pro	Tyr	Asn	Ser	Ser	Glu	Asn	Phe	Glu	Tyr	Ser	Glu	Ser	Glu	Glu
1250						1255					1260			

Lys	Phe	Ile	Ser	Glu	Glu	Asn	Lys	His	Ile	Phe	Lys	Ser	Asn	Ile
1265						1270					1275			
Leu	Tyr	Asn	Ile	Pro	Cys	Leu	Ile	Lys	Ser	Ser	Tyr	Gly	Tyr	Asn
1280						1285					1290			
Ile	Tyr	Phe	Lys	Arg	Gly	Leu	Thr	His	Ile	Ser	Lys	Val	Lys	Thr
1295						1300					1305			
Asp	Phe	Ile	Phe	Tyr	Phe	Pro	Ser	Glu	Lys	Phe	Thr	Phe	Tyr	Glu
1310						1315					1320			
Ser	Val	Phe	Thr	Arg	Ile	His	Ile	Ile	Ile	Leu	Gln	Lys	Lys	Ile
1325						1330					1335			
Glu	Arg	Phe	Leu	Ser	Asp	Tyr	Thr	Thr	Cys	Ser	Val	Asn	Ala	Asn
1340						1345					1350			
Ile	Met	His	Asp	Ala	Ile	Ser	Tyr	Thr	Leu	Ser	Ile	Glu	Ser	Asn
1355						1360					1365			
Gly	Tyr	Phe	Phe	Glu	Glu	Phe	Phe	Asn	Lys	Ile	Gln	Glu	Leu	Leu
1370						1375					1380			
Ser	Leu	Lys	Glu	Ile	Pro	Ser	Arg	Asp	Glu	Tyr	Asn	Glu	Ala	Tyr
1385						1390					1395			
Asp	Glu	Leu	Asn	Ile	Ile	Ile	Gln	Thr	Asp	Thr	Thr	Ser	Gly	Val
1400						1405					1410			
Asp	Lys	Ser	Leu	Lys	Ile	Met	Tyr	Ser	Leu	Phe	Asn	Lys	Tyr	Thr
1415						1420					1425			
Pro	Thr	Asn	Lys	Glu	Met	Tyr	Asp	Ile	Leu	Asn	Ala	Tyr	Phe	Phe
1430						1435					1440			
Tyr	Pro	Ser	Tyr	Asn	Ala	Tyr	Arg	Thr	Tyr	Val	Asn	Glu	Tyr	Phe
1445						1450					1455			
Leu	Arg	Asn	Tyr	Val	Val	Ile	Phe	Ile	Tyr	Gly	Asn	Ile	Ile	Ile
1460						1465					1470			
Ser	Asp	Leu	Lys	Gly	Glu	Glu	Asn	Ile	Thr	Lys	Asn	Asn	Asn	Asn
1475						1480					1485			

Ile Phe Asp Asn Lys Lys Ser Met Asn Tyr Asn Glu Gly Asp Ala
 1490 1495 1500
 Thr Asp Lys Asn Asn Asn Ser Asn Asn Asn Asn Val Glu Ser Ala
 1505 1510 1515
 Asn Asp Ser Thr Asn Tyr Tyr Ile Tyr Asn Glu Asn Asn Ser Ser
 1520 1525 1530
 Asn Arg Asp Thr Asn Lys Tyr Thr Asp Asn Asp Tyr Asn Asn Asn
 1535 1540 1545
 Asn Asn Asn Asn Asn Asn Asn Lys Asp Gly Asp Lys Tyr Leu Ile
 1550 1555 1560
 Asn Glu Lys Ile Tyr Glu Gly Glu Glu Asn Lys Lys Asn Pro Thr
 1565 1570 1575
 Thr Tyr Leu Lys Lys Gln Glu Gln Phe Leu Glu Lys Gln Glu Asn
 1580 1585 1590
 Asn Asn Lys Glu Glu Glu Asn Lys Ser Lys Ser Leu Gln Ile Ser
 1595 1600 1605
 Tyr Asn Gly Ser Gly Ile Glu Tyr Leu Val Lys Leu Cys Glu Ser
 1610 1615 1620
 Phe Ile Ser Lys Val Thr Asn Lys Val Ile Lys Lys Ser Glu Ser
 1625 1630 1635
 Thr Tyr Tyr Thr Lys Lys Leu Ile Asn Asp Glu Asp Ile Glu Ile
 1640 1645 1650
 Asp Met His Asp Pro Gly Gln Asp Leu Ser Asn Ser Ile Thr Val
 1655 1660 1665
 Ser Tyr Ile Ile Asp Ser Glu Thr Leu Leu Asn Asn Val Leu Ile
 1670 1675 1680
 Asn Ile Ile Val Asp Leu Ile Ser Ser Asp Phe Ile Lys Phe Val
 1685 1690 1695
 Lys Ile Lys Tyr Asn Asp Gly Tyr Val Val Glu Val Arg Thr Phe
 1700 1705 1710
 Phe Thr Tyr Asn Gly Leu Gly Gly Leu Leu Phe Ile Ile Gln Ser

1715		1720		1725
Phe Asp Lys Asp Val Glu Gln Leu Glu Ser Asp Ile Cys Thr Phe				
1730		1735		1740
Val Lys Tyr Ile Thr Phe Gln Leu Leu Asn Ile Asp Ile Ser Asp				
1745		1750		1755
Leu Lys Lys Gln Leu Gln Asn Met Lys Glu His Tyr Ile Met Asn				
1760		1765		1770
Asn Thr Ile Phe Thr Phe Asn Gln Glu Tyr Ser Ser Ile Leu Asp				
1775		1780		1785
Glu Leu Ile Thr Gly His Glu Cys Phe Asp Lys Lys Tyr Lys Ile				
1790		1795		1800
Val Gln Ile Phe Asp Glu Leu Ile Asn Cys Pro Asn Ile Ile Leu				
1805		1810		1815
Asn Lys Ile Asn Tyr Ile Leu Arg Lys Ser Lys Lys Asn Ile Phe				
1820		1825		1830
Lys Glu Tyr Lys Lys Thr Asn Ile Val Asn Ile Gln Ser Ser Asn				
1835		1840		1845
Lys Asp Gly Thr Lys Gly His Asp Tyr Leu His Leu Asn Glu Lys				
1850		1855		1860
Cys Asn Tyr Ser Tyr Arg Lys Asn Met Lys Met Ser Asn Ile Gln				
1865		1870		1875
Phe Ser Asp Asn Ser Glu Leu Phe Ile Lys Lys Gln Arg Lys Lys				
1880		1885		1890
Lys Tyr Lys Tyr Ile Pro Ser Asn Gly Thr Thr Gln Ser Asn Asn				
1895		1900		1905
Ile Tyr Lys Lys Glu His Leu Phe Asn Phe Ser Asn Phe Val Glu				
1910		1915		1920
Ile Lys Glu Lys Gly Phe Phe Lys Tyr Ile Ile Ser Tyr Phe Arg				
1925		1930		1935
Lys Asn Asn Arg Lys Tyr Leu Asn Asp Asp Asn Tyr Leu Asp Phe				
1940		1945		1950

Glu Ser Cys Asp Glu Glu Met Ser Lys Asp Asn Phe Gln Ile Phe
 1955 1960 1965

Tyr Asn Phe Thr Asn Asp Ile Asn Lys Ile Arg Glu Tyr Phe Arg
 1970 1975 1980

Gly Lys Phe Thr Asn Asp Lys Glu Val Lys Glu Asn Cys Ser Ile
 1985 1990 1995

Asn Tyr Glu Glu Ile Arg Lys Tyr Cys Tyr Asp His Asn Ile Asn
 2000 2005 2010

Lys Asp Asn Met Ile Arg Thr Lys Ile Glu Ile
 2015 2020

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<400> 22

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Lys Lys Lys Ile Lys Glu Asn Thr Asn Leu Ser Asp Asp Glu Ile Ile
 20 25 30

Ile Ile Tyr Lys Arg Phe Asn Tyr Ile Ser Ser Asn Gly Lys Leu Asn
 35 40 45

Tyr Asp Asn Phe Glu Lys Ser Leu Gly Ile Leu Gly Ser Ile Gln Asn
 50 55 60

Ala Tyr Leu Tyr Lys Ser Ile Phe Lys Ala Phe Asp Leu Asn Asn Asp
 65 70 75 80

Asn Tyr Leu Asp Phe Tyr Glu Phe Cys Val Ala Ile Asn Ile Met Leu
 85 90 95

Lys Gly Asn Lys Lys Asp Lys Leu Lys Leu Ser Tyr Arg Ile Val Asn
 100 105 110

Ala Gly Phe Asn Ser Asn Glu Asp Ala Cys Val His Lys Ser Ser Cys
 115 120 125

Met Val Asn Lys Phe Asn Thr Lys Glu Asp Asn Asn Met Asn Gly Asp
130 135 140

Asn Ile Asn Gly Asp Asn Asn Asn Asn His Asn Asn Ile Asn Gly Asp
145 150 155 160

Asn Asn Asn Asn His Asn Asn Ile Asn Gly Asp Asn Asn Asn Asn Asn
165 170 175

His Asn Asn Ile Asn Gly Asp Asn Asn Asn Asn His Asn Asn Ile Asn
180 185 190

Gly Asp Asn Asn Asn Asn Asn His Asn Asn Ile Asn Gly Asp Asn Asn
195 200 205

Asn Asn His Asn Asn Ile Asn Gly Asp Asn Asn Asn Asn His Asn Asn
210 215 220

Ser His Asn Asn Asn Ser His Asn Asn Asn Asn Lys Ala Glu Asn Ser
225 230 235 240

Leu Gly Gln Pro Leu Asn Glu Lys Asn Ile Asn Asp Pro Ile Asn Lys
245 250 255

His Arg Asn Ser Gln Ser Ile Ile Tyr Asn Ile Asn Asp Glu Tyr Asn
260 265 270

Glu Lys Ile Lys Lys Asn Lys Lys Gln Asp Tyr Ser Asn Tyr Ile Thr
275 280 285

Tyr Glu Asn Phe Glu Lys Ile Val Leu Ser Ile Asn Asp Ile Lys Arg
290 295 300

Gln Leu Leu Gly Thr Gly Asp Glu Ile Ile Thr Ser Gln Ile Lys Tyr
305 310 315 320

Thr Phe Arg Ser Leu Ser Ile Leu Cys Asp Asp Gly Ile Tyr Arg Met
325 330 335

Asn Phe Glu Cys Tyr Lys Lys Ala Leu Lys Cys Asn Glu Phe Leu Lys
340 345 350

Leu Leu Gly Ile His Thr Lys Val Ala Asp Val Phe Leu Gln His Glu
355 360 365

Leu Leu Lys Arg Lys Asp Lys Asn Lys Thr Lys Asn Gly Thr Met Arg

370		375		380
Asn Arg Lys Lys Tyr Lys Asn Asp Ser Asn Arg Ile Ala Asn His Leu				
385		390		395 400
Ile Ile Lys Ser Phe Ser Glu Ser Thr Asn Thr Arg Gly Ser Ile Ile				
	405		410	415
Asn Asp Ser Thr Ser Phe Leu Phe Leu Arg Lys Gln Lys Lys Lys				
	420		425	430
Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Glu Lys Lys Ala Ile Leu				
	435		440	445
Tyr Glu Arg Lys Ser Thr Phe Ser Ser Ser Met Glu Asn Lys Ser Gln				
	450		455	460
Asn Lys Ser Gln Asn Lys Ser His Asn Lys Asn Ile Lys Ser Val Ser				
465		470		475 480
Arg Ile Leu Ser Arg Val Asn Lys Leu Ser Ser Thr Glu Leu Ile Pro				
	485		490	495
Asn Glu Cys Asp His Lys Pro Asn Glu Glu Val Lys Ser Thr Ser Asp				
	500		505	510
Val Leu Thr Pro Ile Phe Phe Asn Asn Gly Asp Glu Lys Met Asn His				
	515		520	525
Asp Thr Asp Gly Asn Met Val Tyr His Lys Asn Asn Val Asp Asp Asn				
	530		535	540
Leu Val Asp Gly Asp Val Val Ser Gln Gly Lys Arg Cys Ser Phe Phe				
545		550		555 560
Ser Ser Cys Glu Asn Lys Lys Asn Glu Glu Asn Lys Ser Ile Thr Phe				
	565		570	575
Asn Asp Ile Asn Ser Gly Asn Ile Asn Thr Asn Ser Cys Ile Met Asn				
	580		585	590
Asn Met Ile Val Thr Lys Glu Ser Asn Glu Glu Ile Ile Asn Glu Glu				
	595		600	605
Ala Gln Ser Ser Tyr Ile Tyr Asn Lys Asn Ile Phe Cys Ser Lys Tyr				
610		615		620

Asn Thr Lys Lys Asp Lys Asn Glu Pro Leu Lys Cys Asp Leu Phe Glu
 625 630 635 640

Cys Ser Phe Ile Asn Asn Asp Lys Asn Ile Val Arg Asp Glu Asp Ser
 645 650 655

Asn His Lys Asn Val Arg Lys Thr Asp Asp Tyr Phe Ile Ile Asp Asp
 660 665 670

Asn Asn Ile Phe Asp Asn Gly Pro Ile Ile Ile Ser Lys Asn Lys Thr
 675 680 685

Asn Asp Arg Glu Arg Lys Leu Leu Lys Thr Phe Ser Ser Ser Ser Leu
 690 695 700

Lys Lys Lys Ser Leu Leu Lys Asn Tyr Asn Tyr His Ile Lys Lys Lys
 705 710 715 720

Asn Lys Asp Pro Asn Val Glu Asp Thr Asn Met Leu Tyr His Asp Asp
 725 730 735

Ile Lys Lys Glu Tyr Asp His Lys Val Thr Lys Asn Asn Lys Asn Thr
 740 745 750

Cys Asn Asn Asn Tyr Tyr Asn Asn Val Ser Phe Asn Ser Ser Ala Tyr
 755 760 765

Tyr Glu Tyr His Ser Asp Ile Asp Leu Ile His Phe Ser Asn Asn Leu
 770 775 780

Lys Lys Lys Lys Lys Lys Asn Val Thr Ser Pro Arg Pro Ser Ser Lys
 785 790 795 800

Glu Tyr Glu Arg Lys Val Thr Tyr His Lys Glu Cys Cys Ser Asn Glu
 805 810 815

Arg Met Lys Asn Ile Lys Val Asn Glu Ser Asp Leu Gly Met Phe Cys
 820 825 830

Val Asn Asn Asp Lys Thr Asn Ile Glu Asp Val Lys Glu Lys Lys Ala
 835 840 845

Cys Asp Val Leu Asn Arg Gly Cys Ile Lys Glu Gln Val Gln Cys Lys
 850 855 860

Ile Ser Glu Phe Glu Asn Asp Lys Gly Asn Glu Ile Tyr Met Gln Glu
865 870 875 880

Phe Lys Lys Cys Ile Glu Lys Tyr Lys Glu Tyr Val Asn Gln Gly Glu
885 890 895

Gly His Leu Lys Asp Glu Glu Glu Glu Lys Asn Asp Asp Glu Glu Glu
900 905 910

Gly Glu Asp Gly Glu Asp Asp Glu Glu Glu Asn Asp Asp Asp Asp Asp
915 920 925

Asp Glu Asp Gly Asp Asp Asp Glu Asp Gly Asp Asp Asp Asn Asp Asp
930 935 940

Asn Asp Asp Asn Asp Asp Asn Asp Asp Asn Asp Asp Asn Asp Asp Asn
945 950 955 960

Asp Asp Asn Asp Asp Asn Asp Asp Asn Asp Asp Asn Asp Glu Lys Ser
965 970 975

Asn Ile Lys Ile Glu Asn Lys Lys Asp Val Pro Asn Ile His Asn Asn
980 985 990

Asn Asp Asp Asp Gly Ile Asn Cys Cys Thr Asn Leu Phe Lys Asp Asp
995 1000 1005

Asp Thr Leu Ser Ala Leu Glu Lys Asn Val Thr Asn Asn Asn Leu
1010 1015 1020

Ile Lys Ile Met Ser Ala Lys Tyr Leu Tyr His Lys Phe Leu Glu
1025 1030 1035

Tyr Lys Asp Phe Met Lys Asn Asn Thr Thr Leu Phe Ser His Phe
1040 1045 1050

Asn Lys Ile Tyr Gln His Glu Asp Asp Lys Ile Asn Thr Asp Asn
1055 1060 1065

Lys Asp Val Leu Asn Tyr Arg Pro Lys His Asn Asn Asp Ile Asn
1070 1075 1080

Tyr Tyr Asn Ile Pro Cys Glu Asp Gln Ile Lys Ser Asp Glu Lys
1085 1090 1095

Lys	Ser	Leu	Leu	Asn	Val	Glu	Phe	Gly	Asp	Asp	Ile	Ile	Lys	Lys
1100						1105					1110			
Lys	Phe	Phe	Ile	Ser	Ser	Val	Asn	Ser	His	Tyr	Val	Met	Ile	Asn
1115						1120					1125			
Asn	Asn	Leu	Thr	Lys	Glu	Gln	Met	Leu	Tyr	Leu	Ile	Arg	Asn	Ile
1130						1135					1140			
Leu	Met	Ser	Ile	Glu	Asp	Tyr	Leu	Lys	Lys	Glu	Lys	Asn	Arg	Asp
1145						1150					1155			
Tyr	Asn	Lys	Ile	Phe	Phe	Leu	Phe	Phe	Ser	Ile	Phe	Ile	Tyr	Asn
1160						1165					1170			
Thr	Gln	Asn	Gly	Gly	Asp	Gln	Lys	Glu	Met	His	Glu	Asp	Glu	Lys
1175						1180					1185			
Trp	Asp	His	Thr	Asn	Ile	Asn	Glu	Asp	Lys	Asn	Val	Glu	Lys	Asn
1190						1195					1200			
Asp	Asp	Tyr	Lys	Asn	Leu	Ser	Asn	Asn	Glu	Asn	Ser	Val	Tyr	Tyr
1205						1210					1215			
Asn	Thr	Met	Leu	Arg	Glu	Ser	Leu	Trp	Asn	Lys	Lys	Lys	Tyr	Ile
1220						1225					1230			
Lys	Leu	Asn	Ile	Phe	Lys	Asn	Ile	Ile	Leu	Val	Ile	Ser	Ile	Val
1235						1240					1245			
Arg	Tyr	Phe	Leu	His	Thr	Ile	Thr	Ile	Ser	Gln	Lys	Tyr	Thr	Ser
1250						1255					1260			
Ser	Tyr	Asp	Ser	Leu	Asp	Asp	Ser	Asn	Met	Ile	Lys	Ser	Met	Asn
1265						1270					1275			
Ser	Leu	Lys	Leu	Asn	Glu	Ile	Asn	Ile	Leu	Leu	Asn	Arg	Ala	Ser
1280						1285					1290			
Glu	Ile	Leu	Glu	Lys	Tyr	Ser	Leu	Gly	Ser	Val	Glu	Asn	Lys	Lys
1295						1300					1305			
Val	Tyr	Ile	Asn	Lys	Ser	Asn	Tyr	Tyr	Asn	Ser	Ser	Lys	Lys	Gly
1310						1315					1320			
Lys	Leu	Ser	Val	Ser	Leu	Arg	Gln	Asn	Lys	Gln	Lys	Lys	Thr	Phe

1325 1330 1335
 His Arg Ile Leu Ala Val Tyr Phe Gly His Glu Arg Trp Asp Leu
 1340 1345 1350
 Val Met Asn Met Met Ile Gly Ile Arg Ile Ser Ser Ile Lys Lys
 1355 1360 1365
 Phe Ser Ile Asn Asp Ile Ser Asn Tyr Phe His His Lys Asp Val
 1370 1375 1380
 Ile Gln Leu Pro Thr Ser Asn Ala Gln His Lys Val Ile Phe Lys
 1385 1390 1395
 Asn Tyr Ala Pro Ile Ile Phe Lys Asn Ile Arg Asn Phe Tyr Gly
 1400 1405 1410
 Ile Lys Ser Lys Glu Tyr Leu Thr Ser Val Gly Pro Glu Gln Val
 1415 1420 1425
 Ile Ser Asn Met Val Leu Gly Asn Leu Ser Thr Leu Ser Glu Leu
 1430 1435 1440
 Leu Ser Glu Gly Lys Ser Gly Ser Leu Phe Tyr Phe Thr Ser Asn
 1445 1450 1455
 Gly Lys Tyr Ile Ile Lys Thr Val Ile Lys Lys Lys Lys
 1460 1465 1470

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 35 40 45
 Tyr Asn Gly Gly Glu Ile Met Gln Pro Asn Ser Lys Leu Cys Glu Leu
 50 55 60

Asp His Thr Ile Asp Thr Asn Val Thr Asp Gly His Ser Asn Pro Cys
 65 70 75 80

Glu Gly Arg Gln Thr Val Arg Phe Pro Asp Asp Asn Arg Ser Gln Cys
 85 90 95

Thr Lys Asn Arg Ile Lys Asp Ser Val Asp Asn Ser Val Gly Ala Cys
 100 105 110

Ala Pro Tyr Arg Arg Leu His Leu Cys Ser His Asn Leu Glu Ser Ile
 115 120 125

Gln Thr Asn Asn Tyr Asp Ser Ser Lys Ala Lys His Asn Leu Leu Ala
 130 135 140

Glu Val Cys Tyr Ala Ala Lys Phe Glu Gly Glu Ser Ile Val Lys Asn
 145 150 155 160

Tyr Glu Gln Leu Gly His His Thr Thr Glu Gly Ile Cys Thr Ala Leu
 165 170 175

Ala Arg Ser Phe Ala Asp Ile Gly Asp Ile Ile Arg Gly Lys Asp Leu
 180 185 190

Tyr Leu Gly Asn Pro Gln Glu Ser Ala Arg Arg Lys Gln Leu Glu Asp
 195 200 205

Asn Leu Arg Lys Ile Phe Glu Lys Ile Tyr Lys Glu Leu Thr Ser Ser
 210 215 220

Arg Asn Gly Lys Thr Asn Gly Ala Glu Glu Arg Tyr Lys Asp Gly Ser
 225 230 235 240

Gly Asn Tyr Tyr Lys Leu Arg Glu Asp Trp Trp Asn Ala Asn Arg Leu
 245 250 255

Asp Ile Trp Lys Ala Met Ile Cys Lys Ala Pro Gly Asn Ala Pro Tyr
 260 265 270

Phe Arg Asn Thr Cys Ser Asn Gly Glu Lys Pro Thr Gly Glu Lys Cys
 275 280 285

Gln Cys Ile Asp Gly Thr Val Pro Thr Asn Leu Asp Tyr Val Pro Gln
 290 295 300

Tyr Leu Arg Trp Phe Glu Glu Trp Ala Glu Glu Phe Cys Arg Lys Arg
 305 310 315 320

Asn Leu Lys Leu Gln Asn Ala Ile Lys Asn Cys Arg Gly Met Asp Asp
 325 330 335

Asp Gly Lys Glu Lys Tyr Cys Ser Arg Asn Gly Tyr Asp Cys Thr Lys
 340 345 350

Thr Ile Arg Ser Ile Asp Lys Tyr Ser Met Asn Arg Glu Cys Thr Lys
 355 360 365

Cys Leu Tyr Val Cys Asp Pro Tyr Val Lys Trp Ile Asp Asn Lys Lys
 370 375 380

Lys Glu Phe Glu Lys Gln Lys Lys Lys Cys Glu Asn Glu Ile Tyr Arg
 385 390 395 400

Asn Asn Glu Ser Ser Gln Asn Ser Pro Lys Asn Tyr Asn Asn Met Tyr
 405 410 415

Glu Thr Asp Phe Tyr Gly Asn Leu Lys Lys Asp Tyr Gln Ser Met Asn
 420 425 430

Asp Phe Leu Lys Leu Leu Asn Ser Glu Thr Pro Cys Thr Asn Ile Ile
 435 440 445

Asp Ala Lys Ser Lys Ile Asp Phe Thr Lys Asp Pro Glu Glu Thr Phe
 450 455 460

Ser His Thr Glu Tyr Cys Asp Pro Cys Pro Trp Cys Gly Leu Lys Thr
 465 470 475 480

Gln Ala Asp Gly Thr Trp Lys Arg Leu Tyr Glu Asn Asp Pro Gln Cys
 485 490 495

Pro Ile Lys Pro Lys Tyr Glu Pro Pro Lys Gly Val Glu Pro Thr Glu
 500 505 510

Thr Asp Val Leu Tyr Thr Gly Lys Glu Asn Lys Asp Ile Ile Val Lys
 515 520 525

Leu Arg Glu Phe Cys Lys Thr Asp Gly Asn Thr Gly Phe Lys Asn Glu
 530 535 540

Glu Trp Asn Cys Tyr Tyr Gln Val Gly Asn Asp Lys Cys Val Leu Glu
 545 550 555 560

Asn Gly Glu Glu Leu Gly Gly Glu Lys Lys Val Lys Asp Tyr Asp Asn
 565 570 575

Phe Leu Met Phe Trp Val Ala His Met Leu Lys Asp Ser Ile Glu Trp
 580 585 590

Arg Ser Lys Leu Ser Asn Cys Leu Lys Ser Asp Lys Lys Thr Cys Ile
 595 600 605

Thr Thr Cys Asn Asp Asn Cys Gln Cys Tyr Asp Lys Trp Ile Gly Lys
 610 615 620

Lys Lys Val His Trp Thr Gln Ile Lys Lys His Phe Asp Lys Gln Thr
 625 630 635 640

Asp Phe Gln Gly Trp Gly His Tyr Phe Val Leu Glu Thr Val Leu Glu
 645 650 655

Gly Asp Gln Phe Phe Thr Asp Ile Thr Lys Ala Tyr Gly Asp Ala Arg
 660 665 670

Glu Ile Val His Ile Gln Glu Met Leu Gln Lys Lys Lys Glu Gln Val
 675 680 685

Leu His Glu Asp Ala Ser Asn Met Lys Thr Ile Ile Asp Glu Leu Leu
 690 695 700

Asp His Glu Leu Lys Glu Ala Lys Gln Cys Ile Val Asn His Lys Asp
 705 710 715 720

Asn Asn Cys Pro Ala Asp Leu Ser Asp Ser Glu Asp Glu Glu Glu Asp
 725 730 735

Ile Pro Gln Arg Gln Asn Lys Cys Ala Lys Pro Ser Gly Thr His Ile
 740 745 750

Arg Ala Leu Val Asn Lys Val Ala Ser Asn Met His His Lys Lys Lys
 755 760 765

Arg Gln Leu Val Asn Arg Gly Val Ser Ser Lys Leu Lys Gly Asp Ala
 770 775 780

Ala Lys Gly Glu Tyr Arg Lys Ser Gly Thr Thr Ile Lys Leu Lys Asp

785		790		795		800
Ile Cys Ser Ile Thr Asp Asp His Ser Asn Ala Lys Arg Gly His Thr		805		810		815
Asp Gln Pro Cys Lys Arg Lys Asp Ser Lys Val Asn Val Lys Asn Arg		820		825		830
Arg Trp Met Asp Thr Ala Gly Phe Ile Ser Asn Thr Tyr Lys Asp Ile		835		840		845
Tyr Met Pro Pro Arg Arg Gln His Phe Cys Thr Ser Asn Leu Glu Tyr		850		855		860
Leu Gln Thr Thr Asn Lys Leu Leu Asn Gly Asn Asp Ile Asn Gly Asn		865		870		875
Pro Asn Ile Ile Asn Asp Ser Phe Leu Gly Asp Val Leu Phe Ala Ala		885		890		895
Asn Tyr Glu Ala Asp Phe Ile Lys Lys Met Tyr Asn Lys Gln Asn Asp		900		905		910
Tyr Lys Asp Asn Ala Thr Ile Cys Arg Ala Met Lys Tyr Ser Phe Ala		915		920		925
Asp Leu Gly Asp Ile Ile Gln Arg Gln His Ile Cys Arg Ile Met Ile		930		935		940
Val Glu Arg Val Lys His Glu Ile Ser Glu Arg Asn Phe Leu Ile Leu		945		950		955
Ser Lys Lys Asn Ile Leu Ala Phe Lys Glu Ile Tyr Lys Glu Asp Thr		965		970		975
Pro Tyr Thr Lys Leu Arg Glu Asp Trp Trp Glu Ala Asn Arg Lys Lys		980		985		990
Ile Trp Glu Ala Met Gln Cys Pro Thr Pro Asn Gly Ser Phe Pro Cys		995		1000		1005
Lys Ser Tyr His Ile Gly Leu Asp Asp Tyr Ile Pro Gln Arg Leu		1010		1015		1020
Arg Trp Met Thr Glu Trp Ala Glu Trp Phe Cys Lys Glu Gln Lys						

1025		1030		1035
Lys Gln Tyr Gly Glu Leu Val	Ser Ala Ser Asn Gly	Cys Lys Asp		
1040	1045	1050		
Glu Arg Val Lys Val Val Arg	Ile Arg Val His Asn	Val Gln Arg		
1055	1060	1065		
Ala Cys Lys His Val Lys Ile	Ile Lys Asn Leu Leu	Ile His Gly		
1070	1075	1080		
Lys Glu Gln Trp Asp Lys Met	Glu Ile Lys Tyr Lys	Leu Leu Tyr		
1085	1090	1095		
Leu Gln Ala Gln Thr Thr Ala	Ala Asn Gly Gly Pro	Asp Thr Tyr		
1100	1105	1110		
Ser Gly Leu Val Asp Glu Asn	Glu Lys Pro Val Val	Asn Phe Leu		
1115	1120	1125		
Phe Glu Leu Tyr Lys Glu Asn	Gly Gly Lys Ile Gly	Asn Pro Arg		
1130	1135	1140		
Asp Thr Pro Arg Ala Lys Arg	Ser Lys Arg Glu Thr	Ala Pro Ala		
1145	1150	1155		
Ser Val Ala Lys Asn Asp Val	Tyr Ser Thr Ala Ala	Gly Tyr Val		
1160	1165	1170		
His Gln Glu Met Gly Pro His	Met Glu Cys Lys Thr	Gln Thr Glu		
1175	1180	1185		
Phe Cys Glu Lys Thr Asp Glu	Gln Tyr Asn Glu Asn	Tyr Thr Phe		
1190	1195	1200		
Lys Asn Pro Pro Pro Gln Tyr	Lys Asp Ala Cys Ile	Cys Asn Thr		
1205	1210	1215		
Arg Pro Pro Pro Lys Glu Asp	Ser Arg Lys Arg Ser	Glu Asp Ser		
1220	1225	1230		
Asp Glu Glu Glu Lys Val Lys	Glu Thr Lys Val Glu	Glu Lys Ala		
1235	1240	1245		
Thr Glu Asp Ala Val Asp Thr	Gly Pro Pro Pro Ala	Pro Lys Glu		
1250	1255	1260		

Ala Thr	Thr Thr	Leu Asp	Val	Cys Pro	Ile Val	Ala Gly	Val Leu
1265			1270			1275	
Thr Lys	Glu Asn	Leu Glu	Asn	Ala Cys	Pro Thr	Lys Tyr	Gly Pro
1280			1285			1290	
Lys Ala	Pro Thr	Ser Trp	Lys	Cys Ile	Pro Thr	Glu Lys	Thr Asn
1295			1300			1305	
Ala Ala	Thr Gly	Ser Glu	Gly	Ser Ser	Gly Asn	Gly Ala	Leu Gln
1310			1315			1320	
Arg Ala	Lys Arg	Ala Thr	Val	Glu Ser	Gly Ser	Pro Val	Thr Ser
1325			1330			1335	
Asn Ser	Gly Ser	Ile Cys	Ile	Pro Pro	Arg Arg	Arg Arg	Leu Tyr
1340			1345			1350	
Ile Gln	Lys Leu	His Asp	Trp	Ala Ser	Gly Asn	Thr Val	Val Ser
1355			1360			1365	
Gly Gln	Ala Gln	Thr Pro	Gln	Gly Gly	Thr Ser	Ser Pro	Ser Gly
1370			1375			1380	
Lys Glu	Thr Pro	Ser Asp	Lys	Leu Arg	Thr Ala	Phe Ile	Gln Ser
1385			1390			1395	
Ala Ala	Ile Glu	Thr Phe	Phe	Leu Trp	Asp Arg	Tyr Lys	Lys Gly
1400			1405			1410	
Lys Ala	Ile Ala	Lys Lys	Glu	Lys Lys	Lys Gln	Met Val	Asp Tyr
1415			1420			1425	
Ser Pro	Leu Ser	Thr Ala	Asp	Pro His	Asn Asn	Pro Val	Ser Leu
1430			1435			1440	
Val Ile	Ala Pro	Asn Pro	Asn	Tyr Asn	Lys Thr	Cys Val	Ile Pro
1445			1450			1455	
Pro Pro	Phe Leu	Arg Gln	Met	Phe Tyr	Thr Leu	Gly Asp	Tyr Ala
1460			1465			1470	
Asp Ile	Phe Phe	Gly Lys	Asn	Asp Ile	Val Ile	Asp Thr	Lys Asn
1475			1480			1485	

Gly	Asp	Lys	Asp	Ile	Ala	Glu	Arg	Glu	Lys	Lys	Ile	Lys	Asp	Ala
1490						1495					1500			
Ile	Glu	Arg	Val	Leu	Lys	Asn	Ala	Asp	Ser	Gln	Pro	Pro	Ser	Asp
1505						1510					1515			
Glu	Lys	Arg	Gln	Thr	Trp	Trp	Glu	Gln	Asn	Gly	Glu	His	Ile	Trp
1520						1525					1530			
Asn	Gly	Met	Ile	Cys	Ala	Leu	Thr	Tyr	Lys	Glu	Lys	Asp	Glu	Lys
1535						1540					1545			
Gly	Thr	Pro	Leu	Lys	Gln	Asn	Glu	Gly	Leu	Lys	Ser	Ala	Leu	Trp
1550						1555					1560			
Asp	Glu	Lys	Asn	Lys	Lys	Pro	Lys	Asp	Gln	Lys	Tyr	Gln	Tyr	Asp
1565						1570					1575			
Lys	Val	Lys	Leu	Asp	Glu	Asn	Ser	Gly	Thr	Ser	Pro	Lys	Ile	Val
1580						1585					1590			
Val	Pro	Ala	Pro	Lys	Pro	Thr	Thr	Thr	Phe	Pro	Pro	Pro	Pro	Ser
1595						1600					1605			
Pro	Thr	Ser	Phe	Ser	Arg	Pro	Pro	Tyr	Phe	Arg	Tyr	Leu	Glu	Glu
1610						1615					1620			
Trp	Ala	Glu	Thr	Phe	Cys	Arg	Glu	Arg	Lys	Lys	Arg	Leu	Glu	Lys
1625						1630					1635			
Ile	Lys	Val	Glu	Cys	Met	Asp	Glu	Asp	Gly	Lys	Lys	Gln	Lys	Cys
1640						1645					1650			
Ser	Gly	Asp	Gly	Glu	Asp	Cys	Glu	Glu	Ile	Arg	Lys	Gln	Asp	Tyr
1655						1660					1665			
Ser	Thr	Val	Arg	Asp	Phe	Tyr	Cys	Pro	Glu	Cys	Gly	Lys	Tyr	Cys
1670						1675					1680			
Arg	Phe	Tyr	Lys	Arg	Trp	Ile	Gly	Lys	Lys	Lys	Asp	Glu	Tyr	Asp
1685						1690					1695			
Lys	Gln	Lys	Glu	Ala	Tyr	Asn	Asn	Gln	Lys	Thr	Asp	Ala	Arg	Arg
1700						1705					1710			

Asn	Asn	Asn	Asp	Asn	Ala	Phe	Ser	Thr	Thr	Leu	Asp	Thr	Cys	Thr
1715						1720					1725			
Thr	Ala	Gly	Asp	Phe	Leu	Gln	Thr	Leu	Lys	Asn	Gly	Pro	Cys	Lys
1730						1735					1740			
Asn	Asp	Asn	Val	Asp	Asp	Ser	Gly	Glu	Asn	Lys	Lys	Ile	Phe	Asp
1745						1750					1755			
Glu	Asn	Gly	Asp	Thr	Phe	Lys	Tyr	Thr	Gln	Tyr	Cys	Gly	Thr	Cys
1760						1765					1770			
Ser	Leu	Asn	Gly	Phe	Lys	Cys	Asn	Gly	Asp	Asp	Cys	Arg	Val	Arg
1775						1780					1785			
Thr	Asn	Val	Thr	Cys	Asn	Gly	Ser	Asn	Arg	Thr	Thr	Thr	Ile	Thr
1790						1795					1800			
Ala	Asp	Asp	Ile	Lys	Asn	Gly	Gly	Asn	Ser	Ala	Glu	Ile	Asn	Met
1805						1810					1815			
Leu	Val	Ser	Asp	Asp	Ile	Asn	Ser	Gly	Asn	Gly	Phe	Asn	Asp	Leu
1820						1825					1830			
Glu	Ala	Cys	Lys	Asn	Ala	Asn	Ile	Phe	Lys	Gly	Ile	Lys	Glu	Asn
1835						1840					1845			
Lys	Trp	Lys	Cys	Val	Tyr	Phe	Cys	Lys	Ser	Asp	Val	Cys	Gly	Leu
1850						1855					1860			
Lys	Lys	Asn	Asn	Asp	Ile	Asp	Gln	Asn	Gln	Ile	Ile	Leu	Ile	Arg
1865						1870					1875			
Ala	Leu	Phe	Lys	Arg	Trp	Leu	Glu	Tyr	Phe	Leu	Asp	Asp	Tyr	Asn
1880						1885					1890			
Lys	Ile	Arg	Lys	Lys	Leu	Asn	Pro	Cys	Ile	Asn	Asn	Gly	Glu	Lys
1895						1900					1905			
Ala	Ile	Cys	Thr	Asn	Gly	Cys	Val	Glu	Gln	Trp	Ile	Asn	His	Lys
1910						1915					1920			
Arg	Thr	Glu	Trp	Thr	Asn	Leu	Lys	Ser	Phe	Asn	Glu	Gln	Tyr	Asn
1925						1930					1935			

Gly 1940	Asp	Asp	Thr	Glu	Arg	Asn 1945	Pro	Arg	Leu	Arg	Phe 1950	Phe	Val	Asp
Leu 1955	Ile	Arg	Gln	Ile	Ala	Ala 1960	Thr	Ile	Asp	Lys	Gly 1965	Asn	His	Asn
Gly 1970	Leu	Val	Lys	Leu	Val	Lys 1975	Ser	Val	Lys	Cys	Asn 1980	Cys	Gly	Asn
Asn 1985	Ser	Gln	Asn	Gly	Lys	Glu 1990	Gly	Glu	Glu	Asn	Asp 1995	Leu	Val	Leu
Cys 2000	Leu	Leu	Gln	Lys	Leu	Glu 2005	Lys	Lys	Ala	Glu	Lys 2010	Cys	Lys	Asp
Asn 2015	Pro	Glu	Thr	Ser	Gly	Ile 2020	Pro	Gln	Gln	Pro	Cys 2025	Glu	Val	Ser
Pro 2030	Asn	His	Ile	Glu	Asp	Glu 2035	Glu	Gln	Pro	Leu	Glu 2040	Glu	Glu	Glu
Asn 2045	Thr	Val	Glu	His	Pro	Lys 2050	Ile	Cys	Asp	Asp	Val 2055	Leu	Lys	His
Asn 2060	His	Asn	Gln	Arg	Asn	Gln 2065	Glu	Arg	Leu	Val	Lys 2070	Asn	Pro	Leu
Val 2075	Gln	Pro	Thr	Leu	Lys	Arg 2080	Lys	Lys	Lys	Lys	Lys 2085	Lys	Arg	Arg
Lys 2090	Lys	Ile	Lys	Lys	Lys	Asn 2095	Gln	Asp	Phe	His	Pro 2100	Arg	His	Leu
Pro 2105	Cys	Gly	Ala	Phe	Ile	Asn 2110	Thr	Asn	Thr	Pro	Lys 2115	Thr	Lys	Thr
Pro 2120	Pro	Ser	Ser	Gly	Lys	Asn 2125	Pro	Trp	Glu	His	Pro 2130	Ala	Val	Ile
Pro 2135	Ala	Leu	Val	Thr	Ser	Thr 2140	Leu	Ala	Trp	Ser	Val 2145	Gly	Ile	Gly
Phe 2150	Ala	Ala	Phe	Thr	Tyr	Phe 2155	Tyr	Leu	Lys	Lys	Lys 2160	Thr	Lys	Ser
Thr	Ile	Asp	Leu	Leu	Leu	Ser	Leu	Ile	Pro	Lys	Ser	Asp	Tyr	Asp

2165		2170		2175
Ile Pro Thr Lys Leu Ser Pro Asn Arg Tyr Ile Pro Tyr Thr Ser				
2180		2185		2190
Gly Lys Tyr Arg Gly Lys Arg Tyr Ile Tyr Leu Glu Gly Asp Ser				
2195		2200		2205
Gly Thr Asp Ser Gly Tyr Thr Asp His Tyr Ser Asp Ile Thr Ser				
2210		2215		2220
Ser Ser Glu Ser Glu Tyr Glu Glu Met Asp Ile Asn Asp Ile Tyr				
2225		2230		2235
Val Pro Gly Ser Pro Lys Tyr Lys Thr Leu Ile Glu Val Val Leu				
2240		2245		2250
Glu Pro Ser Gly Lys Leu Ser Gly Asn Thr Ile Pro Thr Ser Gly				
2255		2260		2265
Asn Asn Thr Thr Ala Ser Asp Thr Gln Asn Asp Ile Pro Thr Ser				
2270		2275		2280
Asp Thr Pro Pro Pro Ile Thr Asp Asp Glu Trp Asn Thr Leu Lys				
2285		2290		2295
His Asp Phe Ile Ser Asn Met Leu Gln Asn Gln Pro Lys Asp Val				
2300		2305		2310
Pro Asn Asp Tyr Thr Ser Gly Asn Ser Ser Thr Asn Thr Asn Ile				
2315		2320		2325
Thr Thr Thr Ser Arg Asp Asn Val Asp Asn Asn Thr His Pro Thr				
2330		2335		2340
Met Ser Arg His Asn Val Asp Gln Lys Pro Phe Ile Thr Ser Ile				
2345		2350		2355
His Asp Arg Asn Leu Tyr Thr Gly Glu Glu Tyr Asn Tyr Asn Val				
2360		2365		2370
Asn Met Val Asn Thr Met Asp Asp Ile Pro Ile Asn Ser His Asn				
2375		2380		2385
Asn Val Tyr Ser Gly Ile Asp Leu Ile Asn Asp Thr Leu Ser Gly				

2390		2395		2400
Asn Glu His Ile Asp Ile Tyr Asp Glu Leu Leu Lys Arg Lys Glu				
2405		2410		2415
Asn Glu Leu Phe Gly Thr Asn His Val Lys Gln Thr Ser Ile His				
2420		2425		2430
Ser Val Ala Lys Pro Thr Arg Asp Asp Pro Ile His Asn Gln Leu				
2435		2440		2445
Glu Leu Phe His Lys Trp Leu Asp Ser His Arg Asp Met Cys Glu				
2450		2455		2460
Gln Cys Lys Asn Asp Asn Glu Arg Leu Ala Lys Leu Lys Glu Leu				
2465		2470		2475
Trp Glu Asn Glu Thr Gln Cys Gly Asp Ile Asn Ser Gly Ile Pro				
2480		2485		2490
Ser Gly Lys Leu Ser Asp Thr Pro Ser Asp Asn Asn Ile His Ser				
2495		2500		2505
Asp Ile His Pro Ser Asp Ile Pro Ser Gly Lys Gln Ser Asp Ile				
2510		2515		2520
Pro Ser Asp Asn Asn Ile His Ser Asp Ile Pro Tyr Val Leu Asn				
2525		2530		2535
Thr Asp Val Ser Ile Gln Ile His Met Asp Asn Pro Lys Pro Ile				
2540		2545		2550
Asn Glu Phe Thr Tyr Val Asp Ser Asn Pro Asn Gln Val Asp Asp				
2555		2560		2565
Thr Tyr Val Asp Ser Asn Pro Asp Asn Ser Ser Met Asp Thr Ile				
2570		2575		2580
Leu Asp Asp Leu Glu Lys Tyr Asn Glu Pro Tyr Tyr Asp Val Gln				
2585		2590		2595
Asp Ile Tyr Asn Asp Val Asn Asp Asp Asn Asp Ile Ser Thr Val				
2600		2605		2610
Asp Thr Asn Ala Met Asp Val Pro Ser Lys Val Gln Ile Glu Met				

2615 2620 2625
 Asp Ile Asn Thr Glu Ile Phe Glu Glu Glu Tyr Pro Ile Ser Asp
 2630 2635 2640

 Ile Trp Asn Ile
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 <212> PRT
 <213> Plasmodium falciparum

 <400> 24

 Met Asn Glu Glu Leu Asn Lys Met Ile Asn Ser Phe Gln Ile Lys Glu
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 Lys Glu Gly Lys Glu Val Asn Lys Asn Asn Asn Ile Glu Lys Asn Gln
 20 25 30

 Asn Ile Asp Leu Asn Ile Tyr Pro Asn Met Ser Asn Tyr Val Asp Ile
 35 40 45

 Gly Ser Asn Ile Tyr Val Glu Gln Ile Lys Asn Ile Ser Lys Glu Glu
 50 55 60

 Val Thr Lys Lys Lys Ser Ile Leu Asn Ser Lys Tyr Ile Ser Ser Lys
 65 70 75 80

 Asn Asn Glu Phe Val Val Ala Gln Leu Tyr Glu Leu Asn Asn Tyr Asn
 85 90 95

 Glu Asn Asn Ile Tyr Glu Asp Arg Asn Leu Phe Ser Asn Ser Thr Asn
 100 105 110

 Ile Tyr Ser Asn Asp Asn Asn Met Lys Lys Tyr Leu Ile Gln Lys Cys
 115 120 125

 Gly Lys Lys Asn Ile Lys Lys Arg Met Asp Ile Leu Asn Gln Glu Asn
 130 135 140

 Asn Asn Met Gly Ile His Lys Asn Ile Val Tyr Asp Asp Asn Asn Asn
 145 150 155 160

 Asn Lys Asn Val Thr Tyr Asp Asp Asn Asn Lys Asn Val Thr Tyr Asp
 165 170 175

Asn Asn Asn Lys Asn Val Thr Tyr Asp Asn Asn Asn Lys Asn Val Thr
 180 185 190

Tyr Asp Asn Asn Asn Lys Asn Val Thr Tyr Asp Asn Asn Asn Lys Asn
 195 200 205

Val Thr Tyr Asp Asn Asn Asn Asn Asn Ser Cys Ser Ile Ile Lys Tyr
 210 215 220

Glu Leu Arg Lys Thr Ser Ile Cys Lys Tyr Trp Ile Lys Gly Ile Cys
 225 230 235 240

Ala Asn Val Glu Cys Asn Phe Ala His Gly Glu His Glu Leu Lys Tyr
 245 250 255

Thr Phe Gly Val Tyr Lys Thr Thr Ile Cys Lys His Trp Lys Lys Asn
 260 265 270

Gly Met Cys Ser Ser Gly Ile His Cys Arg His Ala His Gly Glu Ser
 275 280 285

Glu Leu Gln Pro Lys Asn Leu Pro Leu His Leu Leu Lys Lys Lys Asn
 290 295 300

Asn Leu Lys Asn Lys Asn Gln Thr Lys Ser Phe His Thr Asn Lys Glu
 305 310 315 320

Leu Thr Ile Asn Glu Tyr Asn Asp Arg Ser Ala Asn Asn Arg Asn Val
 325 330 335

Glu His Met Tyr Lys Asn Lys Val Asp Pro Leu Lys Asn Asn Asn Asn
 340 345 350

Asn Asn Asp Asn Ile Tyr Tyr Tyr Gly Asn Glu Glu Asn Gln Lys Asp
 355 360 365

Val Asn Ile Phe Arg Met Asp Thr Phe Tyr Asn Asn Ile Phe Asp Ser
 370 375 380

Arg Asn His Met Asp Lys Pro Pro Pro His Asn Ile Asn Asn Asn Asn
 385 390 395 400

Ser Asn Asn Asn Asn Asn Asn Asn Ile Val Ser Val Glu Gly Lys Pro
 405 410 415

Ile Asn His Asn Thr Pro Asn Ile Leu Asn Asp Gly Asn Tyr Thr Asn
 420 425 430

His Leu Asn His Ser Asn Tyr Ile Tyr Asn Asn Glu Lys Glu Glu Asn
 435 440 445

Glu Lys Arg Asn Phe Asn Tyr Tyr Asp Thr Cys Lys Asn Ile Trp Asn
 450 455 460

Tyr Gln Ile Cys Lys Asp Asp Asn Asn Leu Leu Asn Asn Asn Glu Lys
 465 470 475 480

Thr Phe Phe Phe Phe Ser Asn Val Asn Asn Asn Lys Met Val Glu Cys
 485 490 495

Asn Asn Met Asn Asn Ile Phe Asn Asp Ile His Lys Lys Glu Asn Thr
 500 505 510

Ile Thr Leu Asn Asn Asn Ser Asn Asn Val Ile Asn Ile Lys Lys Asn
 515 520 525

Ile Ile Asp Asp Ala Asp Ile Ser Lys Val Thr Asn Val His Ile Tyr
 530 535 540

Lys Asp Asp His Leu Lys Asn Thr Pro Ile Asn Asn Lys Lys Lys Glu
 545 550 555 560

Thr Arg Leu Ser Gln Gly Lys Lys Asn Thr Tyr Leu Lys Val Asn Phe
 565 570 575

Phe Asn Asn Lys Asn Lys Asp Asn Asn Tyr Asn Asn Asn Ile Ile Val
 580 585 590

Asp Thr Asn Asn Asn Asn Asn Asn Asn Asn Val Ile Lys Asn Asp His
 595 600 605

Asn Lys Ile Asn Asn Asn Asn Leu Ile Phe Gln Asn Ser Arg Phe Met
 610 615 620

Asp His Thr Gly Ala Cys Asp Thr Ile Lys Ser Gly Asp Thr Thr Lys
 625 630 635 640

Ser Gly Asp His Ile Lys Ser Gly Asp His Ile Lys Ser Gly Asp Thr
 645 650 655

Ile Lys Asn Val Glu Asn Phe Val Asn Tyr Thr Asn Ser Asn Asn Ile

660					665					670					
Ser	Asn	Ile	Asn	Ile	Ser	Ile	Asn	Cys	Asn	Asn	Tyr	Glu	Lys	Tyr	Ile
	675						680					685			
Asn	Asn	Met	Ser	Phe	Ile	Asn	Asn	Lys	Glu	Ser	Ser	Asn	Ile	Asn	Lys
	690					695					700				
Asp	Asp	Val	Tyr	Asn	Gly	Asn	Met	Asp	Asn	His	Asn	His	His	Val	Asn
705					710					715					720
Asn	Asn	Asn	Thr	Leu	Cys	Asn	Thr	Ser	Leu	Ser	Asp	Leu	Cys	Ser	Asn
				725					730					735	
Asn	Ser	Ser	Glu	Ser	Lys	Lys	Gln	Glu	Ala	Val	Cys	Leu	Asn	Lys	Asn
			740					745					750		
Asp	Thr	His	Asp	Ile	Ile	Lys	Asn	Val	Ser	Asn	Asn	Met	Lys	Arg	Phe
		755					760					765			
Ser	Leu	Tyr	Met	Asn	Pro	Ile	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn
	770					775						780			
Asn	Asn	Asp	Asp	Thr	Ser	Asn	Asn	Val	Gln	Phe	Ile	Asn	Asn	Tyr	Thr
785					790					795					800
Asn	Asp	Tyr	Phe	Tyr	Tyr	Asp	Glu	Lys	Lys	Asp	Glu	Glu	Gln	His	Asn
				805					810					815	
Pro	Tyr	Asp	Asn	Lys	Asn	Asn	Lys	Ile	Lys	Gly	Phe	Arg	Asn	Ile	Asn
				820				825					830		
Ile	Arg	Ile	Ile	Lys	Lys	Glu	Asp	Glu	Gln	Glu	His	Thr	Asn	Glu	Lys
		835					840					845			
Asn	Asn	Thr	Ile	Phe	Asn	Lys	Asn	Val	Asn	Glu	Ile	Met	Tyr	Ser	Lys
	850					855					860				
Glu	Ile	Thr	Asn	Met	Asn	Asn	Ile	Asn	Arg	Ser	Ser	Asp	Glu	Tyr	Ile
865					870					875					880
Thr	Asn	Asn	Asn	Met	Asp	Asn	Asp	Asn	Asn	Ile	Met	Asn	Asn	Thr	Leu
				885					890					895	
Tyr	Pro	Trp	Lys	Glu	Asn	Lys	Phe	Lys	Asn	Val	Asp	Met	Leu	Asn	Ile
			900					905					910		

Tyr Lys Ile Asn Lys Asp Asp Tyr Leu His Thr Asp Ile Val Lys Asn
 915 920 925

Ile Asp Cys Val Ile Ser Pro Tyr Lys Asp Pro Asn Ile Ile Met Asp
 930 935 940

Arg Ile Asn Asp Asp Asn Asn Ile Asn Met Asp Asn Leu Leu Phe Thr
 945 950 955 960

Tyr Asn Glu Gln Met Asn Asn His His Asn Asn Lys Lys Trp Asn Val
 965 970 975

Phe Asn Asn Ser Ile Ile Leu Glu Lys Asn Glu Lys Ile Thr Asn Ser
 980 985 990

Lys Lys Lys Asn Asn Tyr Lys Ile His Gln Arg Gln Asn Ile Asn Lys
 995 1000 1005

Asn Val Ser Asp Asn Asn Glu Asn Ile Asn Asn Lys Asn Val Ile
 1010 1015 1020

Ser Lys Asp Lys Phe Lys Ile Ile Asn Ser Tyr Ile Asp Tyr Lys
 1025 1030 1035

Leu Asn Tyr His Lys Asn Asn Lys Tyr Ser Tyr Asn Asn Met Glu
 1040 1045 1050

His Asn Ile Lys Asn Val Asn Glu Gln Ser Ser Ile Asn Asn Asn
 1055 1060 1065

Asn Asn Asn Asn Asn Asn Ile Leu Tyr Thr Thr Thr Lys Asp Leu
 1070 1075 1080

Arg Asn Asn Ile His Thr Ile Asn Phe Asn Asp Thr Lys Asn Ile
 1085 1090 1095

Ile Asn Ser Asp Asp Tyr Phe Val Asp His Asn Tyr Asn Tyr Asn
 1100 1105 1110

Tyr Asn Tyr Asn Tyr Asn Tyr Asn Tyr Asn Tyr Ala Tyr Asp Asn
 1115 1120 1125

Ile Glu Leu Ser Asn Lys Asn Met Lys Asp Val Ile Asn Leu Tyr
 1130 1135 1140

Thr	Tyr	Val	Val	Asn	Lys	Lys	Asn	Glu	Lys	Asn	Ile	Tyr	Thr	Ser
1145						1150					1155			
Thr	Asn	Asn	Ile	Ile	Cys	Asn	Asp	Glu	Tyr	Ile	Lys	Lys	Glu	Asp
1160						1165					1170			
Cys	Gly	Asp	Cys	Gln	Met	Val	Glu	Ser	Thr	Gln	Met	Phe	Asp	Glu
1175						1180					1185			
Glu	Ile	Asn	Cys	Ser	Pro	Glu	Asn	Lys	Ser	Asn	Asn	Asn	Asn	Asn
1190						1195					1200			
Ile	Asn	Ser	Asn	Asn	Ile	Asn	Ile	Asn	Ser	Ser	Ser	Ser	Ser	Asn
1205						1210					1215			
Asn	Asn	Asn	Asn	Asn	Asn	Asn	Tyr	Tyr	Tyr	Asn	Asp	Tyr	His	Asp
1220						1225					1230			
Asp	Asp	Asn	Asn	Asn	Asn	Ile	Met	Asn	His	Ser	Tyr	Tyr	Asn	His
1235						1240					1245			
Ile	Asn	Asp	Ser	Tyr	Tyr	Tyr	Gln	Phe	Asn	Asp	Leu	His	Ser	Lys
1250						1255					1260			
Glu	Asn	Gln	Gln	Lys	Tyr	Thr	Tyr	Asn	Ile	Asn	Asn	Leu	Ile	His
1265						1270					1275			
Asn	Met	Lys	Leu	Leu	Asn	Thr	Glu	Tyr	Glu	Ser	Pro	Leu	Asn	Ser
1280						1285					1290			
Glu	Gln	Glu	Lys	Thr	Ile	Leu	Lys	Asn	Ile	Ala	Val	Asp	Arg	Asn
1295						1300					1305			
Asn	Asn	Ile	Asn	Ile	Asn	Asn	Ile	Thr	Leu	Pro	Thr	Leu	Gln	Asp
1310						1315					1320			
Asn	Gln	Met	Asn	Asn	Tyr	Lys	Lys	Tyr	Thr	Asn	Asp	Leu	Gly	Ser
1325						1330					1335			
Val	Ser	Glu	Gly	Tyr	Thr	Ser	Thr	Tyr	Asn	Asp	Thr	Leu	Lys	Met
1340						1345					1350			
His	Ser	Glu	Thr	Phe	Met	Asp	Ser	Gln	Asn	Gly	Met	Tyr	Ile	Leu
1355						1360					1365			

Pro Gln Tyr Val Thr Arg Glu Cys Ile Asn Ser Pro Tyr Asp Ser
1370 1375 1380

Ser Leu Phe Thr Asp Glu Asn Arg Glu Glu Lys Lys Asp Asn Lys
1385 1390 1395

Glu Arg Glu Ile Ile Gly Asn Met Leu Tyr Asp Glu His Ile Cys
1400 1405 1410

Met Asp Asp Glu Asp Leu Phe Gly Arg Ser His Leu Phe Asn Ile
1415 1420 1425

Phe Asn Asn Glu Glu Glu Ile Asp Ile Asn Gln Lys Asp Asn Tyr
1430 1435 1440

Tyr Asp Arg Asp Asp His Asn Asp Tyr His Arg Asp Asp His Asn
1445 1450 1455

Asp Tyr Asp Arg Asp Asp His Asn Asp Tyr Asp Arg Asp Asp His
1460 1465 1470

Asn Asn Tyr His Arg Asp Asp His Asn Asn His His Arg Asp Asp
1475 1480 1485

Asn Asn Asn His His Arg Asp Asp His Asn Asn His His Arg Asp
1490 1495 1500

Asp Asn Asn Asn His His Gly Asp Asp Val Ile Tyr Glu Glu Thr
1505 1510 1515

Lys Lys Thr Asp Asn Ile Glu Ile Pro Leu Lys Asp Asn Asp Ile
1520 1525 1530

Met Ile Asn Asn Ser Tyr Asn Asp Ser Leu Ile Asn Tyr Asn Lys
1535 1540 1545

Tyr Phe Val Lys Glu His Glu Tyr Asn Asn Ile Asn Asn Asn Asn
1550 1555 1560

Lys Ile Glu Glu Asn Leu Lys Ile Lys Asn Ser Tyr Asp Thr Ser
1565 1570 1575

Ser Lys Gln Asn Tyr Lys Glu Asn Asn Met Phe His Asp Val Asp
1580 1585 1590

Asn Phe Thr Ser Leu Leu Leu His Ile Asn Asn Tyr Asn Glu Lys

140

1595		1600		1605
Asp Phe Met Asn Phe Lys Asn Glu Asp Tyr Thr Leu Asn Lys Glu				
1610		1615		1620
Ile Tyr Phe Asn Glu Cys Lys Tyr Val Lys Glu Ile Lys Asn Ile				
1625		1630		1635
Asp Gln Asp Asn Thr Lys Glu Leu Gly Ile Val Leu Gln Asn Asp				
1640		1645		1650
Asp Gln Ile Ser Glu Ser Asp Met Arg Thr Lys Lys Met Ile Tyr				
1655		1660		1665
Ser Ile Phe Ile Lys Glu Glu Glu Thr Lys Lys Asn Lys Asn Leu				
1670		1675		1680
Glu Asn Ile Cys Tyr Thr Asn Glu Gln Glu Lys Tyr Asn Asn Leu				
1685		1690		1695
Ser Ile Ile Asn Gln Lys Gln Asn Ile Thr Met Asp Ile Ile Lys				
1700		1705		1710
Asn Val Asp Glu Leu Ser Phe Asp Asn Met Glu Gln Met Asn Ile				
1715		1720		1725
Lys Ile Asn Asp Asn Gln Met Tyr Asn Glu Gln Val Met Asp Asn				
1730		1735		1740
Met Glu Asp Arg Ile Glu Lys Ile Asn Ile Leu Thr Asn Asp Asn				
1745		1750		1755
Ile Gln Asn Gly Ile His Asn Asn Asn Asn Ile Ile Glu Glu				
1760		1765		1770
Lys Gln Ser Leu Lys Asp Asn Asn				
1775		1780		

<210> 25
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 <212> PRT
 <213> Plasmodium falciparum
 <400> 25

Met Asp Gly Pro Leu Ala Ile Ile Ser Met Asp Lys Ser Leu Phe Phe
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Lys Ser Leu Lys Asn Asn Asn Met Leu Glu Ser Thr Gly Ile Asn Glu
20 25 30

Glu Asn Tyr Leu Asn Ala Leu Thr Asp Asp Thr Met Asn Glu Thr Val
35 40 45

Phe Leu Asp Tyr Val Lys Gly Lys Met Met Asp Val Tyr Lys Glu Thr
50 55 60

Asn Met Asn Arg Tyr Asn Val Ile Asn His Ile Tyr Leu Thr Ser Lys
65 70 75 80

Val Trp Asp Thr Tyr Asn Tyr Leu Thr Pro Thr Leu Lys Val Lys Arg
85 90 95

Phe Arg Val Phe Lys Asp Tyr Ser Phe Phe Ile Asp Glu Val Lys Lys
100 105 110

Ile Tyr Glu Asn Lys Leu Lys Lys Ser Thr Ile Cys Asn Lys Ala Ile
115 120 125

Leu Ile Asn Arg Asn Lys Asn Val Glu Met Lys Lys Gly Leu Asn Asp
130 135 140

Lys Asn Glu Thr Ser Glu Lys Lys Val Glu Glu Asn Ile Lys Asn Arg
145 150 155 160

Lys Cys Gln Asn Glu Val Lys Glu Tyr Ser Lys Lys Asp Thr Arg Leu
165 170 175

Asn Val His Asn Val Lys Glu Leu Glu Arg Asn Lys
180 185

<210> 26
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<213> Plasmodium falciparum

<400> 26

Met Asn Lys Thr Gln Lys Lys Arg Gly Lys His Asp Ala Leu Thr Tyr
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Met Tyr Cys Val Tyr Tyr Asp Asn Tyr Glu Ser Leu Cys Thr Ser Gln
20 25 30

Ile Ser Ile Phe Cys Asn Leu Arg Arg Asn Val Phe Ser Asn Phe Asn

142

35

40

45

Arg Asn Asp Leu Ile Asp Gln Asn Ile Val Tyr Leu Asn Val Cys Asn
 50 55 60

Asn Glu Thr Tyr Tyr Asn Lys Ala His Glu Glu Asn Asp Lys Val Lys
 65 70 75 80

Gly Tyr Ile Tyr Glu Glu Gly Leu His Asp Asn Met Phe Phe Ser Phe
 85 90 95

<210> 27

<211> 1464

<212> PRT

<213> Plasmodium falciparum

<400> 27

Met Glu Leu Ile Lys Asp Asp Ile Lys Lys Lys Lys His Lys Lys Lys
 1 5 10 15

Met Gly Arg Arg Tyr Ser Tyr Asn Asp Asn Ile Glu Glu Leu Lys Lys
 20 25 30

Leu Lys Lys Ile Leu Leu Asn Leu Asp Val Leu Ile Asp Val Ser Lys
 35 40 45

Ile Val Ile Gln Lys Asn Glu Asn Phe Asp Met Glu Leu Leu Asn Asn
 50 55 60

Val Asn Asp Arg Phe Val Glu Lys Ile Tyr Tyr Leu Leu Lys Asp Lys
 65 70 75 80

Lys Lys Asn Met Leu Pro Glu Glu Glu Leu Val Glu Phe Ile Phe Leu
 85 90 95

Leu Leu Lys Glu Arg Asn Glu Tyr Asn Asn Leu Glu Lys Lys Lys Lys
 100 105 110

Asn Ile Tyr Ile Asn Val Gln Lys Asn Leu Thr Asn Cys Pro Ile Lys
 115 120 125

Asn Glu Val Thr Thr Leu Ile Gln Lys Ile Asn Lys Phe Tyr Tyr Tyr
 130 135 140

Phe Lys Glu Phe Leu Leu Lys Glu Lys Tyr Asn Thr Lys Asp Asp Ala
 145 150 155 160

Asn Lys Lys Tyr His His Asn Lys Glu Asp Thr Asn Asn Tyr Asn Asn
 165 170 175

Ile Pro Glu Asn Tyr Lys Asn Gln Ser Lys His Asn His Asp Tyr Leu
 180 185 190

Asn Tyr His Lys Asp Asn Ile Ile Asn Ile Asp Ile Asn Asp Leu Gly
 195 200 205

Tyr Asn Asn Asn Asp Asn Asn Lys Glu Ser Val Phe Tyr Asn Lys Glu
 210 215 220

Ile Ile Lys Asn Asn Lys Gln Arg Asn His Phe Gln Gly Lys Glu Lys
 225 230 235 240

Lys Asn Thr Lys Asp Glu Val Ala Thr Thr Ile His Asn Ile Leu Ser
 245 250 255

Cys Lys Asp Ile Ser Ser Asn Gln Phe Asn Asn Tyr Asn Asn Thr Leu
 260 265 270

Gln Thr Ser Asp Tyr Asn Lys Asp Phe Leu Tyr Lys Asp Val Leu Met
 275 280 285

Asp Ile Met Ser Thr Asp Ser Glu Lys Asn Met Thr Ser Gln Lys Ser
 290 295 300

Ile Thr Ser Glu Lys Asn Met Thr Cys Glu Lys Asn Met Thr Cys Glu
 305 310 315 320

Lys Asn Ile Thr Cys Glu Lys Asn Ile Thr Cys Glu Lys Asn Ile Thr
 325 330 335

Cys Glu Lys Asn Ile Thr Cys Glu Lys Asn Ile Thr Cys Glu Lys Asn
 340 345 350

Ile Thr Cys Glu Lys Asn Ile Thr Cys Glu Lys Asn Ile Thr Cys Glu
 355 360 365

Lys Asn Ile Thr Cys Asp Lys Asn Ile Ile Ile Ser Lys Arg Lys Asp
 370 375 380

Asn Gln Gln Thr Phe Cys Glu Asp Lys Ile Ser Val Ser Ser Asp Asp
 385 390 395 400

144

Ile Glu Pro Leu Ile Ser Ser Tyr Ser Glu Tyr Ile Met Arg Asp Glu
 405 410 415

Pro Thr Tyr Ile Pro Asp Lys Lys Leu Leu Ser Glu Glu Glu Asn Lys
 420 425 430

Lys Leu Glu Lys Glu His Cys His Met Lys Asn Asn Ile Lys His Asn
 435 440 445

Asp Ile Ala His Val Thr Asn Asn Asp Ser Ile Asn Asn Tyr Leu Tyr
 450 455 460

Asn Lys Tyr Tyr Ile Asn Glu Asp Asn Lys Ile Met Gln Asn Asp Ser
 465 470 475 480

Asn Leu Asn His Asn Lys Asn Glu Asp Ile Lys Lys Val Asp Ile Glu
 485 490 495

Asn Thr His Met Ile Asn Gly Tyr Asp Pro Asn Glu Asp Ile Leu Trp
 500 505 510

Asn Asn Asn Lys Thr Ile Ser Ser Glu Lys Leu Cys Val Pro Arg Thr
 515 520 525

Lys Asp Asn Glu Ile Leu Lys Asn Lys Glu Leu Asn Asn Tyr Leu Gly
 530 535 540

Glu Ala Tyr Asn Asp Cys Ile Asn Glu Glu Thr Tyr Lys Asn Met Lys
 545 550 555 560

Leu Glu Asn Cys Asp Glu Lys Lys Lys Lys Thr Asn Phe Gln Asn Val
 565 570 575

Asn Ser Asn Phe Lys Glu Gln His Leu Leu Phe Cys Asn Asn Leu Gln
 580 585 590

Glu Gln Met Lys Tyr Arg Ser Asp Lys Asn Leu Lys Tyr Asp Glu Lys
 595 600 605

Leu Tyr Asn Asn Asn Ile Asn Asn Asn Asn Asn Asn Asn Asn Asn
 610 615 620

Asn Asn Asn Thr Asn Asp Asp Ile Lys Ile Val Lys Pro Asn Asn Gln
 625 630 635 640

His His Ile His Asn Asn Leu Leu His Tyr Ile Asn Asn Lys His Asn

145

645										650					655					
Leu	Leu	Asn	Ser	Ile	Thr	Leu	Ser	Asn	Ser	Leu	Pro	Gln	Lys	Asn	Asp					
660										665					670					
Tyr	Gln	Ile	Asn	Asn	Phe	Ile	His	Lys	Asn	Asp	Thr	Asn	Glu	Phe	Lys					
675										680					685					
Asn	Leu	Thr	Ile	Asn	Asn	Phe	Gln	Lys	Lys	Glu	Lys	Glu	Leu	Tyr	Thr					
690										695					700					
Leu	Asn	His	Met	Asn	Thr	Ile	Lys	Ser	Asn	Ile	Asn	Asn	Ile	His	Met					
705										710					715					
Lys	Asp	Ser	Gly	Asp	Thr	Glu	Val	Thr	His	Asn	Asn	Gln	Ser	Phe	Phe					
725										730					735					
Phe	Asn	Thr	Asn	Gln	Ile	Glu	Asn	Glu	Lys	Lys	Lys	Lys	Asn	Asn	Asn					
740										745					750					
Asn	Asn	Ile	Lys	Thr	His	Ile	Ala	Asn	Phe	Asn	Ile	Ile	His	Lys	Asn					
755										760					765					
Asn	Leu	Asn	Glu	Ser	Gly	Lys	Asn	Met	Glu	His	Tyr	Ile	Ala	Ser	Gln					
770										775					780					
Glu	Glu	Asn	Ile	Leu	Phe	Glu	Asn	Lys	Asn	Asn	Asp	Met	Glu	Glu	Leu					
785										790					795					
Tyr	Arg	Glu	His	Ser	Arg	Glu	Leu	Leu	Glu	Glu	Asn	Ile	Ile	Asn	Lys					
805										810					815					
Ile	Gly	Asn	Asn	Thr	Lys	Lys	Lys	Lys	Glu	Tyr	Asp	Glu	Cys	Thr	Met					
820										825					830					
Ser	Thr	Cys	Ile	Asp	Asn	Val	Val	Tyr	Asn	Ser	His	Asp	Asn	Ile	Asn					
835										840					845					
Gly	Glu	Lys	Lys	Asp	Glu	Asn	Asn	Met	Glu	Tyr	Phe	Ile	Lys	Ser	Glu					
850										855					860					
Asp	Glu	Ser	Leu	Lys	Asp	Phe	Asp	Met	Leu	Leu	Tyr	Asn	Asn	Arg	Lys					
865										870					875					
Glu	Asn	Ser	Glu	Arg	Glu	Glu	Asp	Lys	Ser	Ile	Glu	Asn	Ile	Lys	Met					
885										890					895					

Leu Gly Thr Glu Ser Phe Tyr Glu Asp Glu Asn Asn Asp Glu Asp Ile
 900 905 910

Lys Gln Phe Asp Glu Asn Leu Thr Tyr Glu Gln Arg Lys Ile Asn Asp
 915 920 925

Asp Asn Tyr Gly Asp Met His Tyr Ile Asp Val Glu Asp Asp Asp Tyr
 930 935 940

Glu Asn Val Arg Asn Lys Asn Glu Asp Ser Ser Asn Ile Tyr Asp Asp
 945 950 955 960

Glu Glu Ile Tyr Asn Gln Lys Glu Glu His Asp Gly Lys Lys Ile Phe
 965 970 975

Leu Asn Arg Ile Glu Asn Asn Ala Ile Asn Asn Leu Tyr Lys Thr Tyr
 980 985 990

Glu Met Ile Gln Gly Asp Asn Asp Asp Met Asp Asp Asn Tyr Tyr Leu
 995 1000 1005

Tyr Asp Glu Asn Glu Lys Gly Ala Thr Lys Asn Ile Leu Cys Glu
 1010 1015 1020

Phe Asn Lys Lys Gly Lys Lys Gly Ile Val Asn Lys Phe Asn Arg
 1025 1030 1035

Asp Met Leu Gln Lys Ile Glu Lys Asn Tyr Asp Asn Asn Asp Ile
 1040 1045 1050

Asn Asn Asp Asn Asn Asn Asn Asp Asn Asn Asn Asn Asn Asp Asn
 1055 1060 1065

Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn
 1070 1075 1080

Asn Gln Lys Lys Phe Met Asn Thr Arg Asn Asp Asn Tyr Ile Asn
 1085 1090 1095

Asn Asn Ile Tyr Leu Asn Lys Ala Asn Pro Asn Ile Phe Asn Glu
 1100 1105 1110

Asn Thr Thr Asn Tyr Asn Gln Lys Glu Asn Ser Phe Asn Gln Ser
 1115 1120 1125

Asp	Phe	Leu	Leu	Leu	Lys	Lys	Lys	Glu	Gln	Gly	Asn	Ser	Arg	Leu
1130						1135					1140			
Lys	Lys	Trp	Leu	Cys	Lys	Ile	Asn	Ala	Arg	Glu	Lys	Glu	Lys	Glu
1145						1150					1155			
Lys	Lys	Leu	Gln	Gln	Lys	Lys	Asn	Glu	Ser	Tyr	Asp	Arg	Glu	Leu
1160						1165					1170			
Lys	Asn	Cys	Thr	Phe	His	Pro	Thr	Leu	Asn	Asn	Asn	Arg	Ile	Lys
1175						1180					1185			
Arg	Glu	Gly	Thr	Ile	Lys	Glu	Met	Asn	Asp	Thr	Tyr	Asp	Asp	Asp
1190						1195					1200			
Asp	Asn	Lys	Asn	Leu	Ser	Glu	Asn	Tyr	Asp	Cys	Tyr	Asn	Lys	Tyr
1205						1210					1215			
Val	Asn	Asp	Thr	Tyr	Tyr	Gly	Asp	Asn	Asn	Lys	Asp	Cys	Tyr	Asn
1220						1225					1230			
Phe	Asp	Gln	Glu	Lys	Ile	Tyr	Asp	Phe	Asn	Asn	Asn	Ser	Tyr	Tyr
1235						1240					1245			
Lys	Asn	Asn	Glu	Gln	Asn	His	Ser	Phe	His	His	Phe	Asn	Ile	Asp
1250						1255					1260			
Lys	Lys	Arg	Asn	Asp	Asn	Thr	Asn	Met	Lys	Lys	Lys	Met	Asn	Arg
1265						1270					1275			
Asn	Lys	Ile	Leu	Tyr	Leu	Lys	Gly	Leu	Lys	Ser	Lys	Glu	Leu	Leu
1280						1285					1290			
Leu	Gln	Lys	Lys	Ile	Asp	Tyr	Gln	Asn	Glu	Glu	Glu	Lys	Lys	Phe
1295						1300					1305			
Lys	Lys	Glu	Cys	Ile	Phe	His	Pro	Thr	Ile	Lys	Asp	Asn	Val	Lys
1310						1315					1320			
Ile	Phe	Leu	Ser	Asp	Leu	Pro	Asn	Gly	Tyr	Asn	Lys	Thr	Val	Asp
1325						1330					1335			
Arg	Ile	Lys	Arg	Gly	Val	Glu	Glu	Lys	Lys	Arg	Ile	Asn	Asn	Phe
1340						1345					1350			

Leu Gln Tyr Arg Ile Pro His Met Asn Asn Asn Gly Asn Ile Gln
1355 1360 1365

Asn Glu Lys Lys Asn Glu Gly Lys Gln Asn Asn Lys Lys Lys Thr
1370 1375 1380

Asn Asn Ile Pro Gln Pro Phe Ser Phe Asp Lys Gly Gln Tyr Lys
1385 1390 1395

Val Lys Ile Lys Pro Val Phe Phe Glu Arg Lys Ile Lys Ile Ser
1400 1405 1410

Glu Asn Lys Ile Ala Cys Leu Ala Val Arg Glu Asp Glu Asp Pro
1415 1420 1425

Leu Tyr Ile Val Asp Ile Phe Cys Lys Ile His Ala Leu Lys Asn
1430 1435 1440

Glu Asn Lys Gln Ile Leu Tyr Asp Tyr Ile Leu Asp Glu Leu Lys
1445 1450 1455

Gln Glu Ser Phe Glu Lys
1460